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Taking technology to the poor

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A talisman for alleviation of poverty

"I WILL give you a talisman ...... Recall the face of the poorest and the weakest man whom you may have seen, and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it ? Will it restore him to a control over his own life and destiny ? In other words, will it lead to swaraj for the hungry and spiritually starving millions ? Then you *will* find your doubts and yourself melting away."



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Taking technology to the poor

P. J. Lavakare

It is unfair, says the author, to categorize the technologies in boxes based on the social strata of society since science and technology, per se, *are not value specific. However, he adds, there do exist some specific socio-economic development sectors where properly chosen technologies can make a real impact on the life of the poor. What exactly are these areas and how could one effectively meet the challenge? Here are the author's answers.*

AMELIORATION OF POVERTY through increased food production, improved productivity and employment generation has been the essential theme of our five year plans which have provided a mechanism for the economic development of our country since national independence. This plan objective presents, no doubt, very difficult and complex tasks to achieve and the Government has approached the problem through specific schemes and mechanisms in various economic and service sectors of its plan. With rapid advancement in science and technology, science has no longer remained a subject only for satisfying one's curiosity but with the emergence of new technologies, mankind has looked at these tools to see how they could be used for improving the quality of life and satisfying the necessary needs of the society at large. The Government of India, ever since independence, has always been encouraging the pursuit of science and technology and also provided necessary infrastructures through setting up of research institutions and national laboratories for this purpose. Scientific and technological research has also been encouraged in our educational institutions

In order to express its firm commitment to pursuit of science and technology, the Government of India through its Scientific Policy Resolution (SPR), adopted in March 1958, has clearly enunciated that one of the aims of it's scientific policy would be "to secure for the people of the country all the benefits that can accrue from the acquisition and application of scientific knowledge". As a result of this commitment, India has attained a very important position in the world as far as science and technology activities are concerned; particularly, within the developing countries, India is considered as a leader in this field In these efforts, involving the promotion of science and technology for development, the direct use of technology forms a very important aspect of this process since the appropriate use of the various technologies available to mankind can

Views expressed in this article are not necessarily those of the organisation to which the author belongs.

make a very quick impact on the achievement of many social objectives.

In order to highlight Government of India's approach to the use of technology, in January 1983, the late Prime Minister Smt. Indira Gandhi had proclaimed a Technology Policy Statement (TPS) at the annual session of the Indian Science Congress held at Tirupati in 1983. One of the basic objectives of the technology policy is to "provide the maximum gainful and satisfying employment to all strata of society, with emphasis on the employment of women and weaker sections of society". It is thus clear that Government of India, through its Scientific Policy Resolution of 1958 and the Technology Policy Statement of 1983 has clearly expressed its commitment to the use of science and technology for the benefit of the weaker sections of the society.

The conscious concern

In spite of these policy statements and various measures taken over successive five year plans, the government is conscious of the fact that a real impact of science and technology has not yet reached the various strata of our society in particular the weaker sections of the society have yet to benefit, in a large way, through the application of science and technology. It is with this conscious concern that, in the Seventh Five Year Plan, special efforts are envisaged to mobilise the large science and technology potential, expertise and facilities in the country for accelerating the pace of rural development and widening its horizons. It is recognized that the real needs in the countryside have to be carefully analyzed from the viewpoint of the contribution that science and technology can meaningfully make. It is also recognized that programmes to be undertaken for application of science and technology will have to be done in cooperation with various field agencies and that linkages would have to be established between the field agencies, state governments, research institutions and the various science and technology agencies which are operating in the country, so that the infrastructure created over the years are used for this purpose.

And the distortions!

However the concern for the application of science and technology gets distorted when it is viewed in isolation and without the full understanding of the scope of science and technology. Science and technology per se, are not value specific. Science which deals with understanding natural phenomena which with generation of new knowledge does not take into account social or economic environment of the society. The laws governing the falling of an apple are universal and are applicable in any socio-economic environment. Similarly technology which involves the application of knowledge cannot be classified into social strata by branding some technologies as those for the rich, or for the poor, for the white or for the black etc. There is no doubt an important aspect of choosing the right technology depending upon the use for which it is to be put. This choice depends on the requirements which have to be satisfied in a particular case. Unfortunately, by branding technologies through various labels such as 'appropriate' technology, 'rural' technology and technology for the poor, one is restricting the various choices available for satisfying the basic objectives, namely, the overall development of the weaker section of the society.

In paragraphs which follow, some specific examples would be given where it will be clearly seen that a particular technology can be used for the poor as well as for the rich depending upon what the final objective is. In my opinion therefore, it is unfair to categorise the technologies in boxes based on the social strata of the society. Unfortunately, this trend has even affected many programmes involving foreign aid which restricts the use of the real technologies desired by the recipient developing country on the ground that the desired technology is not 'appropriate' for satisfying the requirements of the needy poor. In fact, there are many aid programmes which require that the technologies to be supplied must be those which will satisfy the requirements of the poorest of the poor. In this process, sophisticated technologies which may be required by the country for its overall development are denied on artificial and flimsy ground Thus there are various dimensions to branding the use of technology, and for the present purpose, one should clearly stress the point that it will not be appropriate to brand the technology as the one being for poor or for rich etc. More importantly one has to analyse all the characteristics of various technologies available to see how a suitable mix of these could be utilised for the development of the poor. In order to drive this point home following paragraphs will discuss some specific socio-economic development sectors where properly chosen technologies can make a very important impact on the development of our weaker sections.

Making the impact

(i) **Education:** It is an accepted fact that education is one of the most important needs of any society, and in a society like ours, with a large population spread over vast rural areas, the task of providing education to the masses becomes an extremely difficult technological and managerial task. The large numbers of growing potential student population pose a challenge of physically providing large numbers of schools, school teachers and other facilities which are the normal essential ingredients of providing education. Modern technology of using a satellite for directly transmitting programmes which could be received by a direct receiving TV set, can provide a very major answer to solving this problem of educating the masses. Through this technology the requirement of teachers could, to a certain extent, be reduced; no doubt at

the cost of losing personal interaction between the students and teachers. This via media approach has to be used if we are to catch up with the growing problems associated with providing the basic need of education for our masses. The satellite TV technology cannot only give means of providing basic education but it can also help in raising the awareness of the people involved in various professions, particularly farmers, artisans, village workers etc. about the modern developments in science and technology and how they could help to improve the productivity in the professions being practiced by these workers. Thus, in the area of education, adoption of technologies for merely providing cheaper blackboards, writing material, slide projectors etc. cannot be considered as the most appropriate technologies for the poor but the use of Satellite TV technology, can, in this case, be considered as an essential technology required by the poor for satisfying their need for education.

(ii) **Health** : In order to provide better health for the poor there are two approaches; one is through prevention and the other through providing medicines for the cure. In each of these approaches provision of basic education to a large mass of our population has to be given the first priority for which the satellite TV media, as described in the previous para, could also be an appropriate technology. Use of clean and potable drinking water has to be propagated by devising various simple techniques e g. involving carefully designed pottery provided through the efforts of the local artisans and village workers. Number of simple technologies would have to be propagated in this regard. However, for a large country like ours and particularly faced with the problems connected with major communicable diseases, modern techniques of producing vaccines for diseases such as malaria and leprosy would also have to be pursued using modern techniques in the field of biotechnology. National efforts are being taken using both these approaches for satisfying the basic requirements of good health for the poor.

(iii) **Food** : For providing the basic requirement of food, science and technology can once again claim a very important role. Firstly the preservation of food is an important aspect of improving production The losses which take place as a result of insects and rodents, can considerably be reduced by providing appropriate technologies for drying and preserving the food grains soon after harvesting. Various national laboratories and agricultural universities are giving considerable attention to aspects relating to post harvest technology involved in food preservation after harvesting. In this area use of solar energy, through properly designed solar driers making maximum use of solar energy, forms an important technological area. Further, through various modern techniques in biological sciences such as efficient methods of nitrogen fixation, generation of high yielding varieties through proper choice of genetic strains etc. are areas of scientific and technological development through which substantial amount of increase in food production can be achieved. In this area, our farmers and agricultural scientists have to work very closely so that these modern technologies provide direct benefit to the farmers. Another area where suitable choice of technologies can make a great impact on improving food production as well as improving efficiency is the one relating to development of agricultural implements based on proper designs and choice of materials. Once again this is an area where local artisans and farmers and agricultural scientists from various laboratories and universities are making efforts to work together.

(iv) **Energy** : Energy is considered to be most important requirement or the basic need of a very large fraction of our population. Energy is required for cooking food and providing a source of power for the daily requirements such as heating, lighting etc. In a traditional rural society, and that too dispersed in a decentralised manner, it is not always possible to depend on a single technology namely that of hydro-electric or coal or nuclear energy as a single source of power. New technologies are continuously being evolved to satisfy the energy requirements of the poor. In this area various advances which have been made in providing energy through use of biogas plants is an ideal example. The Government of India, through its various organizations such as Khadi & Village Industries Commission, Department of Non-conventional Energy Sources, Indian Council of Agricultural Research, Council of Scientific and Industrial Research as well as a large number of voluntary organisations are playing an important role in generating appropriate designs and technologies for the use of biogas plants in various areas taking into account the local requirements and availability of local resources. Further, since firewood is an important source of energy for a large part of our population in rural areas, considerable attention is also being given by many of our national laboratories and voluntary organizations to identify and propagate fast growing varieties of trees which will provide the necessary firewood for the people, and at the same time, ensure a proper ecological development of our landscape. In doing so, various techniques of basic sciences have contributed to generating appropriate varieties of plants which are suitable to varying conditions of soils in different parts of country. Such technologies of generating appropriate and fast growing varieties of trees definitely form very important technologies relevant to the needs of the poor.

(v) **Shelter** : Providing housing and shelter to the poor is also a very important socio-economic development objective and science and technology can play a very important role in satisfying this basic need. Suitable technologies for providing low-cost housing using local resources and materials are being developed in various national laboratories and research institutions. There is a need for ensuring that these technologies which are generated in laboratories are

(*Contd. on page* 26)

The issue is to make technology work for the poor !

Kiran Karnik

One can surely take pride in our fast growing communications technology but if it comes to looking at its real impact on the poor one will have to think twice, argues the author and adds, "traditionally, communication to the masses—especially in rural areas—goes through a local leader who is, therefore, in a position to act as an information 'gate-keeper'. Thus, the masses do not have access immediately to the latest information, and it is ensured that some of the information (e.g., on minimum wages) does not get to them at all. Can new technology help them to get out of this information bondage?"

THE TECHNOLOGICAL REVOLUTION of the last four decades or so, dating from the invention of the transistor in 1948, has had its largest—and probably most profound—impact in the field of communications. The extremely rapid and even accelerating progress in the areas of electronics and space technology, in particular, have resulted in massive changes in the quantity, quality, time and reliability of communication. The computer revolution (again, a result of the advances in electronics) is fast developing a synergistic relationship with communications, leading to further possibilities in both fields.

In India, the revolutionary developments of the last four decades have effectively been telescoped into the last decade or so. In fact, the last two or three years have seen an unprecedented change in the communications scene in the country. The advent of operational satellite communication through INSAT has made possible—or even triggerred, one might say :

(i) a massive expansion of the television network, from some 20-odd TV transmitters covering about 20 per cent of the population in 1981 to over 180 transmitters covering 70 per cent of the population by the end of 1984 ;

(ii) direct reception of TV via the satellite at practically any location in the country, with augmented sets ("direct reception sets"—DRS) providing 100 per cent coverage, in theory ;

(iii) the networking of all the radio stations via satellite, ensuring higher quality and reliability of service ;

(iv) the extension of telecommunication facilities, quickly and without depending on terrestrial links, to any location;

(v) the transmission via satellite of disaster warning messages to specially designed receivers, located in disaster-prone areas.

Meanwhile technological advances have resulted in lowering the costs of products such as VCR's, colour TV sets, radios, cassette players, etc. The consequent increased demand has led to mass-production on even larger scales, resulting in further lowering of costs. This positive cycle is continuing and costs of intems such as VCR's are a fraction of what they were just a few years ago The cost and availability of such items —especially VCR's and colour TV sets—has undergone a tremendous change in India in the last three years. Permitting import and lowering of customs duties have led to a virtual flood of imports, thanks to the demand generated by "live" telecasts of such events as the Asiad, cricket Tests and Olympics, and the increased frequency of feature film broadcasts. The expansion of TV services to new towns (almost one a day over the last few months) has ensured continuing demand.

VCR's have reached even the remotest corners of the country, and villages without a single cinema theatre and often without a "pucca" road or electricity now have "video theatres" where the latest feature films are shown to paying audiences.

But the issue is ..!

But what do all these changes and technological advances mean to the poor and disadvantaged in our society? Do they have any relevance at all to that half of our population that continues to live below the poverty line? Does the development and induction of new technology in communications hold out any hope for a better life for the poor?

Traditionally, communication to the masses—especially in rural areas—goes through a local leader who is, therefore, in a position to act as an information "gate-keeper." Thus, the masses do not have access immediately to the latest information, and it is ensured that some of the information (e.g., on minimum wages) does not get to them at all. Can new technology help them to get out of this information bondage?

The introduction of new technologies has very often resulted in increasing the gap between the priveleged elite and the disadvantaged. Will the increased availability of information and communication also lead to a widening of the gap?

Issues such as these should determine the utility of the new communications technologies, in our particular context. The following paragraphs attempt to examine some of them in greater depth.

And the Potential

Information is today a key input not only for the progress of society as a whole, but for individuals too. The differential availability of information to various segments of society can lead to differential incremental gains. An earlier hypothesis postulated that new information would result in greater gains to the already better off, resulting in increasing disparities. However, some studies in India have established that—*under certain conditions*—the disadvantaged gain relatively more than the priveleged. Thus, in one study, the gain in knowledge was greater amongst women than men, and was the greatest in the case of illiterate women. This is obviously a finding of great importance from the point of view of promoting equity, and of helping the poor. It is therefore crucial to examine the conditions under which this happened. The key factors seem to be:

(i) general availability of the information—i.e., its dissemination by broadcast;

(ii) access to the broadcast;

(iii) comprehensibility of the broadcast—especially the language of transmission;

(iv) relevance of the message or information for the poor.

These seem to be the necessary conditions, though they may not be sufficient for moving towards information—equalisation.

If it is information that is a stimulant of economic progress, then it is communications that is power today. The ability to influence—if not actually control—communications is probably one of the greatest sources of political power today. Little wonder then that one of the first (and most important) targets in a coup nowadays is the radio or TV station. In a more generalised way, one might say that access to the means of communication is an important determinant of power. If, therefore, the disadvantaged and the poor are to have their due share of political power—in a broad sense of the term—then they must have definite and unhindered access to the means of communication or, at the very least, be able to significantly influence it.

In summary, one might say that communications technology can definitely play an important part in helping the poor and in removing disparities if it can meet the needs outlined What follows is a brief discussion on steps to meet these requirements and other needs of the poor.

Reaching the poor!

Full use must be made of the now extensive ratio and TV networks to broadcast programmes of interest and relevance to the poor. In particular, the direct broadcast capability of INSAT should be fully exploited to reach remote rural areas.

To be relevant and effective, programmes must—generally speaking—be area, culture and language specific. This implies decentralised, local production. Low-cost equipment now available for programme production—both for radio and TV—makes possible

the setting up of a large number of production facilities. Further, it facilitates recording in the field, enabling the production of participative programmes involving the audience: a desirable and effective format for programmes.

Since access to the programming is an obvious and essential condition towards information-equalisation, it is necessary to arrange for community reception facilities. Community viewing, despite some very serious problems, has been proven to be viable and practical. While the social problems related to it have to be tackled on a different basis, the technical problems concerning maintenance of the sets are solvable. The Satellite Instruction Television Experiment (SITE) demonstrated this a decade ago by ensuring a TV set availability of over 80 per cent in over 2300 far-flung and remote villages. With the technology available today, it should be far easier to develop and maintain appropriate TV sets for community viewing, thereby by-passing the information "gate-keeper".

Villages without electricity supply are inevitably poorer and more information-starved. Use must be made of the boradcast media to take information to them and to integrate them in the network. Ten years ago, SITE successfully demonstrated the use of battery powered TV sets in about 150 unelectrified villages in Orissa. Today's technology could make this a far easier task if there is a will. The capital cost of such battery-powered community sets is obviously greater, but them so are the benefits—in both economic and social equity terms.

Massive investments are to be made in the telecommunications infrastructure in the next few years. While these are by and large essential, it is necessary to ensure that one does not ignore the needs of the poor and develop only a modern and efficient network for the vocal elite. Satellite technology makes it possible to ignore distance from an urban centre (or communications hub) and location as variables that affect cost. Thus, in theory, extending communication to a remote village in a corner of the country is not more expensive than reaching a new area near a big metropolis. Further, new technologies make it possible to think of a nation-wide messaging system: a highly reliable and fast telegraph system to replace our present one, in which telegrams often take days to reach many destinations. Such a system could also reduce the pressure on and demand for telephones, the capital cost per line of which is really prohibitive for a poor country. In fact, one can now conceive of a message system that operates in a oneway but near-simultaneous mode, almost like a telephone but at a fraction of the cost. For many uses, this may be adequate and is of special relevance to the poor in the rural areas who often need to get in touch with their relatives working in the cities or vice versa. In such cases, the telephone has no meaning, because even if the caller has access to a public phone, the party at the other end does not have a telephone at home. An efficient and fast telegraph system is the only answer to such a need, and will be a boon to the poor. Studies have indicated that such a system is already feasible in our country and can be set up using a very small fraction of INSAT's communication capability.

Another use of INSAT capabilities of special relevance to the poor is the disaster warning system. This provides a warning signal to a group of villages in the event of any impending disaster e. g., a cyclone on the basis of predictions made by an appropriate warning centre. The technology has been developed and demonstrated, but has not yet undergone any actual operational use. Its utility will obviously be the greatest for those who, for economic reasons, tend to stay on in a danger zone even after the intial general warning provided by the broadcast media and the district officials. For obvious reasons, it is the poor who cannot afford to go away on the basis of a general "likely to affect" warning and it is therefore they who will benefit from this new disaster warning system which can provide a specific, localised warning to a small number of villages even after other means of communication have broken down. (There are, of course, other problems connected with evacuation which are not addressed here).

Conclusion

Unlike most other technologies, new developments in the field of communications can—if properly used—help the poor rather than by-pass them. Whether this actually does happen depends upon our will to do so and the innovative ways in which we can put together the various elements that the new developments provide. A few definite steps are necessary and these include:

(i) Using new mobile and low-cost equipment for the production of relevant programmes in decentralised production facilities, involving the audience and making the programmes as field based and participatory as possible.

(ii) Using fully the capabilities of INSAT for radio and TV broadcasting, especially the direct broadcasting capability to reach remote rural areas.

(iii) Setting up community reception facilities radio and TV on a massive scale, including in unelectrified villages.

(iv) Developing special, almost maintenance-free sets for community viewing, and making them operable from batteries. Some development work to optimise the cost and performance of power sources is also required.

(v) Extending the communication system to villages, particularly through a satellite-based telegraphy system.

(vi) Perfecting and installing a disaster warning system in disaster prone areas.

These few steps will not overnight transform the poor, for neither communications nor technology *per se* are magic wands that will make our problems disappear. However, if we begin to move in the direction implied by these suggestions both literally and in spirit we would have embarked on a path that will benefit the disadvantaged.

It is necessary to note that communication is a resource, an input into the development process. In fact it can often substitute for monetary resources a fact that planners often tend to ignore. It must not therefore be considered a sop for the elite or the vocal, organised middle-class; rather, it must be an important input in our programmes to alleviate and combat poverty. With INSAT and the extensive TV network, we now have a large part of the infrastructure that can help us to change the economic and physical quality of life for the poor. We have the tools that enable us to reach remote areas and the disadvantaged directly, enabling a change from "trickle down" policies to a frontal attack on poverty. Never before has such an opportunity and capability co-existed with need. What is required is a willingness to use these tools, these capabilities, for our real needs rather than for trivial purposes.

Communications can be used to dominate and subjugate, but it can also be used to liberate The content and configuration of the communication system are both important in this respect. The technological building blocks can be put together in various ways, and the macro-system engineering must be done in such a way that in consonance with our goals it works for the benefit of the poor. □

Achheja : The solar village

G. Satya Rao

THE SLEEPY VILLAGE OF ACHHEJA, 35 kilometres from Delhi, on the Ghaziabad road, has earned the distinction of being one of the 15 villages in the country where an integrated scheme is being implemented for utilisation of non-conventional sources or to be precise, "renewable sources of energy". The village was transformed into a village with modern facilities through this scheme, implemented jointly by the Union Government department of non conventional energy sources and the Indian Association for the advancement of science, a voluntary organisation. According to Mr. Maheswar Duval, Secretary of the Union Department, 200 more villages are to get this benefit by March next year.

The scheme laid great thrust for the utilisation of solar energy. The 900 watt photo voltaic solar panels energise the 13 batteries during the day time to provide Electricity to light the 30 tube lights in the village lanes and Harijan basti. According to Dr. G. Gururaja, Director of the project, the batteries once fully charged can supply power to these lights for 12 hour duration. The lights are switched on automatically with the sun set or the brightness goes below a particular level. For the time being, the supply is for four hours, at the end of which they automatically go off. He said domestic lights may also be provided, through a Special photo voltaic panel, set up on the street light pole.

The village maternity and child care centre is provided with a solar water heater system of 200 litre capacity. A 65 litre capacity refrigerator is being added to the centre. The community well too is fitted with a pump that works on solar energy. There is a community television set, also operating on this solar energy.

Smokeless chullas

Over 500 out of the 700 households in the village now have smokeless chullas, designed and fabricated locally. There are 27 family type biogas plants in the village. A windmill provides water for irrigation of the fields, lying barren for years. Very soon the village will have a 170 cubic metre biogas plant for generation of 35 KW electricity for domestic lighting, a gasifier for generation of 5 KW electricity and a solar thermal power station of 50 KW capacity to help small industries.

According to Mr. Chaturvedi, Secretary of the Association, the scheme brought about a sea change in the socio-economic life of the villagers. The water supply scheme saved the villagers of drudgery and waste of time at the well. Now the pump provides running water from 9.30 in the morning and people carry drinking water or wash clothes or animals at liesure. The community television set provides both entertainment and information, particularly about their agriculture. The Krishi darshan programme on doordarshan encouraged the villagers to go in for sowing even though it was "late" and also save a crop from pests.

It is no wonder when a villager described the village a self reliant one on the path to progress. The village remained a dark patch in the midst of brightness all around, as the neighbourhood was connected to the power grid. "We have a hearty laugh with pride, when the street lights were glowing and we were hapily watching the cinema on the doordarshan, even though the neighbouring villages were plunged in darkness due to power break down. Our power is as sure of the Sun. He gives us light during the day when he is there and stores enough for the night when he retires". This was his criptic coment. □

Process improvements lead to Increased productivity

Why not now demystify this technology!

Bunker Roy

Good understanding of the existing conditions in rural India and psyche of its poor is the pre-requisite to achieving breakthrough in the sphere of technology transfer, argues the author and narrates, in details, all that happens when the so-called experts plan their strategies living away from the scene. He examines here the UNICEF designed 3-tier system, "adopted without much thought" by all State Governments, for providing drinking water to problem villages. The real answer to the problem, he asserts, is his Hand Pump Mistri and not what is being tried to be sold.

I WISH WE WERE a bit more balanced and open over this issue of technology transfer for the rural poor. This word 'technology' has come to mean many things to many people. What we associate with this word today is either irrelevant or unrelated to solving the problems of the rural poor. With our extremely limited exposure to the actual real life, immediate and urgent problems of the poo, if we are not pontificating on what technological options are available for the rural poor we are doing the next worst thing of thrusting it down their throats thus impoverishing him more in the process.

Technology as we know it now is modern, vague, frightfully expensive, exploitative and to nearly 300 million people in this country the benefits are in direct, intangible and by and large invisible. This has happened because we have had to take someone else's word for it. We are told to think our technologist is better educated, more widely read, ostensibly more knowledgeable, more exposed to scientific advances so he should know what is good for the poor, what practices the poor should adopt, how and why they should keep silent and take whats coming and any voice raised against it smacks of ingratitude. If and when the people should come up with a counter-idea that exposes the faults and limitations of a system thought of by so-called experts and UN-types sitting in air-conditioned offices this is not playing cricket.

A sit goes in Rajasthan

The State of Rajasthan has 33,305 populated villages out of which 24,037 were identified as problem villages as far back as 1981. A problem village is defined as (i) which does not have an assured source

of drinking water within 1.6 kms or within a depth of 15 m; in case of hilly region within a vertical height of 100 metres, (ii) where the source of water is susceptible to water borne diseases like cholera and guinea worms and (iii) where water has excessive salinity, iron or flourides. In 1981 more than 20,000 hand pumps had been installed and more than 50 per cent were out of action for want of proper maintenance. By 1984 more than 40,000 hand pumps were expected to be installed. What arrangements had the Government made to repair and maintain these pumps?

What was in operation at that time was a UNICEF designed 3-tier system adopted without much thought by all State Governments in a conference in Madurai (Tamil Nadu) in 1979. What made it far easier was the fact that UNICEF agreed to provide equipment, jeeps, trucks, training materials and cover costs of training everyone from the top to the bottom. The system they agreed to was as follows:

This '3-tier' system!

1. Tier One : A district mobile maintenance team (one team for every 500|600 hand pumps) consisting of 5 men (driver, machanic, two helpers, mason) who work under the supervision of a Junior Engineer. This team is supposed to do minor and major repairs.
2. Tier Two : The Block level mechanic from the Public Health Engineering Department (PHED) His duty is to regularly check 50 hand pumps and carry out minor repairs above the ground. If and when the hand pump assembly has to be taken out he has to summon the district maintenance unit He has no transport provided to him.
3. Tier Three : The village level hand pump caretaker. The buck stops here He is selected by the government He works free of charge. The other name for it is shramdan. He is trained for 2 days. He is given some spanners to keep the nuts and bolts tight. He is supposed to keep the foundation clean and give some health education No more no less. If anything more happens to the pump he is supposed to send a postcard.

And its pitfalls!

It is immediately evident that the 3 tier system has been designed by 'experts' who have never lived and worked in a village. They have, to be sure, never experienced what it is like to live without water for months just because the hand pump is out of order for want of a simple leather washer. Since Tier One and Tier Two is not answerable to the community because they are permanent government employees the fact that pumps have remained out of order for months has not bothered them the least. To add insult to injury the community was told that the government owned the pump. The community had no stake in the hand pump and the government made it clear that the pump was government property. This is reflected in the 3 Tier System where neither the Block Mechanic nor the District Maintenance team will allow the community to take their own initiative and get the pump repaired by someone in the village. Why? Because the person is not trained.

The HPM is born!

These were some of the issues that were responsible for the birth of the Hand Pump Mistri (HPM). The idea grew out of a discussion in a village tea shop. He was the district maintenance team driving past in a fancy truck donated by UNICEF and said, "All for a washer in a hand pump. Is'nt it too stupid for words? We have way side machine shops in villages repairing tractors, diesel and electric pumps, bullock carts and agricultural machinery. Most of them do not have degrees, diplomas or are even literate. And the government thinks we are incapable of changing a washer 100 ft below the ground. Its just another way of wasting money." He could not have put across the point better. There is a vested interest in making simple issues look complicated, easy solutions look expensive and practical ideas look as if it has taken a great deal of research and field testing to think out.

We realised it is too vast a problem to be left to the engineers and experts alone. By far the most serious flaw in the 3 Tier System is the marginal and cosmetic involvement of the community which actually uses the pump. The 'experts' have come up with a caretaker who is normally an unpaid youth doing something else for a living. For major repairs he corresponds with the district maintenance unit by a system of post cards where even the postage stamp is supplied by the Government|UNICEF because he is supposed to be so poor.

And the job he did!

In 1981 Tilonia trained semi-literate rural youths under TRYSEM to repair and maintain the 200 hand pumps installed for scheduled castes with assistance from the Ministry of Home Affairs. After 3 months training they were placed on the field with startling results:

1. They were in a position to carry out 90 per cent of the minor and major jobs on the hand pump above and below ground.
2. The community was willing to pay between Rs. 40—100 to get their pumps repaired and offer manual labour when needed.
3. A trained mechanic or degree holder in mechanical engineering was not required to

repair hand pumps. A semi-literate village youth could do the same job, perform the same function as the caretaker, the block mechanic and the District Maintenance team *without leaving the village* given the proper training and the right set of tools.

4. Jeeps and trucks were not necessary for repair and maintenance, The same job could be done on a cycle.

5. The HPM was answerable to the community. He was identifiable in flesh and blood. He was not a government servant and only working parttime in repairing and maintaining hand pumps. For which as a professional he deserved to be paid.

6. It was cheaper to maintain.

Once this experiment was conducted we went to the State Government of Rajasthan with the results with the hope that they study it and possibly replicate it elsewhere.

To the credit of the State Government where the political will of the Chief Minister played a significant part the following decisions were taken :

(a) The repair and maintenance of the hand pump will be the responsibility of the community and not the PHED.

(b) A rural youth with some mechanical background will be selected by the community and sent for training for 3 months under TRYSEM. After training he will be appointed as a Hand Pump Mistri (HPM).

(c) The HPM will not be a government employee. He will be answerable to the community that selects him. The employment will be part time.

(d) The HPM will look after 36—40 hand pumps within a radius of 5 kms from his village.

(e) The State Government will pay Rs. 150|hand pump per year with Rs. 50|hand pump per year included for spare parts. After training the HPM will get a grant of Rs. 250|for tools from the Government as per TRYSEM rules. For a set of special tools which he will need for below ground repairs costing Rs. 2,500 he will get a subsidy (50 per cent) if he is a Scheduled Caste|Scheduled Tribe when he gets a bank loan.

The vital statistics !

Till May 1984 a total of 37,151 hand pumps have been installed all over Rajasthan. The State Government estimated that a total of 1,175 HPMs needed to be trained through Industrial Training Institutes and voluntary agencies like Tilonia. In varying degrees of competence 886 HPMs have been trained and placed in various districts. In many areas it has not been working smoothly because of poor or no understanding of the whole idea of the HPM.

It does not help when we go into the background of most of the HPMs. What is so extraordinary about them is that they are so ordinary. The profile of 71 HPMs placed in Ajmer District for instance should give some idea how easy it is to find such people all over India :

1. Occupational Status :	Blacksmith (2 HPMs) ; Agricultural labourer (51) ; Cycle repair shop (2) ; Electrician (1) ; Pan Shop (1) : Barber (2) ; Grocery shop (1) ; Vegetabel shop (1) ; Sweet shop (1) ; Mason (1) ; Famine Work (8) ; General labourer (10) :		
2. Age Group	18—25 years	59 HPMs	
	26—30	14	
	31—35	6	
	Over 35	2	
3. Income from occupation other than repair and maintenance	Rs. 50—100	30 HPMs	
	101—150	41	
	151—200	10	
	Over 200	Nil	
4. Educational Qualifications :		Scheduled Caste	Scheduled Tribes
	Up to 5th Std	15	14
	6th—8th	16	19
	8th—10th	2	4
	10th plus	1	—
5. Land Holding :		Scheduled Caste	Others
	Landless	9	10
	Marginal (0—5)	16	18
	Small (5—12½)	8	8
	Over 12½ bigahs	1	1

And the demystification !

The demystification that has taken place by making technology simple, accessible and understandable should be possible to convey in the following chart :

Socio-economic	3 Tier System	1 Tier System
1. Cost/hand pump/year	Rs 400—500/h.p./year	Rs. 150/h.p./year : Rs. 50 included for spare parts.
2. Tools & Equipment	Trucks, jeeps, trailors heavy repair equipment special tools.	cycle special tools
3. Educational Qualifications	Mechanical degree holder Diploma ITIs.	4th—10th standard pass; Primary school.
4. Personnel	Addl Chief Engineer, Supd. Engineer, Executive Engineer, Asst. Engineer, Block mechanics, Caretakers, lower staff.	HPM at the village level.
5. Training	No long term training programme at any level Short term orientation courses for engineers, two days for caretakers.	3 months training under TRYSEM: one month theoretical, 2 months practical.
6. Community participation	marginal : at the care taker's level only : not answerable to the community	HPM identified by the community : priority given to SCs/STs living below the poverty line.
7. Community Accountability	None. Answerable only to government (Tier 1& 2)	The users have the right to recall the HPM and send some one else if his work is poor Sarpanch countersigns work done then only HPM can get amount from BDO.
8. Community resources	None	The use of village resources, knowledge and skills are total.
9. Institutional Finance	No provision. Tools are given free to caretakers.	HPM takes a loan from nearest bank for special tools worth Rs. 2,500. 50% subsidy for SC/ST.

And the problems !

1. The One Tier System is not without problems. By far the biggest threat to the idea not working on the ground is the breed we call the Educated Man. In spite of all the work that has been done the international experts in UNICEF call it an 'experiment'. The 3 Tier System has by and large failed and they are looking for alternatives but these people have not got intelligence nor grace enough to accept the 1 Tier System—because they themselves could not think of it. The 1 Tier System has been adopted all over the State but UNICEF in public statements have said it is still 'unproven.' I have written a number of articles on the One Tier System : in their eyes it is premature. Because it sounds too good to be true in its simplicity and effectiveness. I am accused of misrepresentation and distortion of facts. These experts cut a sorry figure.

2. Funds for maintenance that should have been transferred from the PHED to the Development Department is taking time. Many BDOs do not know what the money is for and how it is to be paid to the HPMs.

3. The training institutions need support. Vehicles to take the trainees out to damaged hand pumps which are presently lying with the PHED.

4. The selection of HPMs have been faulty in many cases. Instead of one HPM per 5 km radius many DRDAs have sent 5 trainees per village for TRYSEM training. This makes the appointment of the HPM very difficult.

5. Bank managers are reluctant to give loans for special tools because they think the HPMs will not pay back. If they look after their hand pumps properly there is no reason why the amount cannot be paid back.

6. There is confusion over the right type of tools. Project Officers DRDAs turn to the local PHED engineer for guidance on the type of tools to be bought and because HPMs are looked on as caretakers in many areas the wrong set of tools are given. Naturally they cannot carry out the major and minor repairs so the feedback is 'See we told you. They are just not competent enough to repair a hand pump.'

7. The sarpanches in many villages are not prepared to take the responsibility of monitoring HPMs. They have to countersign that the pumps are in working order and with that receipt the HPM gets the money from the BDO. In many cases sarpanches are not prepared to get their hand pumps repaired by scheduled caste HPMs.

These are all problems that could be sorted out in time. None is very serious. For once the community has responded spontaneously and even the BDOs are quite excited over the idea of the HPM. It solves the major problems we are all grappling with :

(a) technology transfer ;

(b) community participation in this case is total;

(c) community accountability is assured ;

(d) village knowledge and village skills are being used ;

(e) employment in the rural areas is being generated ;

(f) village based institutions (panchayats, banks) are being used, government schemes are being used (TRYSEM, SC|ST subsidies) to the fullest extent ;

(g) it is a system which is totally dependent on the HPM and not inter-dependent like the 3 tier system where one cannot do without the other. This promotes self reliance.

And why this prejudice ?

The tragedy with too many experts spending too much time on a simple problem is that they can never come to a decision acceptable to all. This has happened with the one tier system. The people who use the pump want it : its the best, most acceptable and difinitely by far the most effective system because it is located closest to the village. The only trouble is our high powered experts do not want the system to work. It has damaged their pride, it has exposed their limitations and they are desperately looking for a way of saving face. The top engineers are all for it but the middle and low rung within the Department look on this process of demystification as a distinct threat. UNICEF's narrow vision does not help.

Now different versions are coming out : two-tier systems, three and a half tier systems so long as it is not the one tier because that identifies it with Tilonia and the State Government of Rajasthan. The Ministry of Works and Housing have not even acknowledged it in their Working Group Paper on the 7th Plan. Just shows the lobby that is at work (or is it lack of understanding ?) not to allow the demystification to take place on a large scale. But that I am afraid is the only answer if we want technology to reach the poor. ☐

Nuclear Power Board Constituted

THE DEPARTMENT OF Atomic Energy has constituted a Nuclear Power Board (NPB) recently. The Board has supreseded the erstwhile Power Projects Engineering Division (PPED). NPB is headed by a Chairman. Besides Chairman, NPB consists of eight members from within Department of Atomic Energy and other Government organisations.

The functions of the Board are :

(i) Design, engineering construction and operation of nuclear power stations;

(ii) Testing and development of systems, equipment and components required for nuclear power generation.

(iii) Generation and supply of electricity including arrangements for its transmission.

(iv) Recruitment, training and management of personnel, and

(v) All other activities connected with the efficient operation of nuclear power stations.

The Board will also ensure functional co-ordination between its programmes and the activities of Bhawa Atomic Research Centre and other research centres under DAE. It will identify R & D inputs required for the programme and fund research and development in these areas to be undertaken by BARC and other research centres.

The formation of NPB is to be understood in the context of the long term power profile, recently prepared by the Department of Atomic Energy, which envisages an installed nuclear generation capacity of 10,000 MWe by the turn of this century. The prime thrust of the activities of the Nuclear Power Board would be directed towards accelerated pace of implementation of Nuclear Power Programme. ☐

CART for rural development

The Council for Advancement of Rural Technology (CART) set up under the aegis of the Ministry of Rural Development, Government of India, acts as :

1. The national nodal point of co-ordination of all efforts at development and dissemination of technology for rural areas ;
2. A catalyst for development of technology, appropriate for the rural areas, by identifying and funding research and development efforts by different organisations ; and
3. As a clearing house of information and a data bank, it also strengthens existing institutions of research and develops or sets up institutions, so that national-level institutions on matters of rural interest are built up.

The projects geared to study or promotion of integration or interaction of social sciences with rural technology would qualify for financial assistance by CART. The projects may be sponsored by Government departments, autonomous organisations, co-operative institutions or voluntary agencies.

The Secretary, Department of Science and Technology, Government of India, is the Chairman of the 14-member panel of scientists of CART to consider proposals of projects. ☐

This technology and this scenario !

Dr. G. N. Seetharam

In this existing, development model, argues the author, it's no use "playing with a cocktail of technologies" for alleviating human misery. Let's not be Utopian, he says and adds fundamental shifts in the nature of technological choices cannot take place without a fundamental realignment of the social and political force configuration in this country. Here, in this piece, he says, the objectives are (i) to examine the role and place of technology within a certain model of development; (ii) to examine the implications of technological alternatives for welfare; and (iii) speculate on the possible future framework.

TECHNOLOGY—WHAT IT MEANS ? By technology we mean the application of Science into the process of production. In other words it is the relationship between inputs and outputs. For most of human history technology in spite of occasional revolutionary leaps was static It is only after the advent of the industrial revolution that technology has become a dynamic transforming force After the second World War the impact of technology on human lives and the production process has become much greater There has been an organic coalescence between science and technology leading to the worldwide phenomena of the scientific technological revolution Between the laboratory and the factory or the farm the time taken for transfer of technology is very short We are now practically . living in a revolutionary age, i e , the technotronic age The 'future shock' of Alvin Toffler is coming true Communications are expanding and intensifying. There has been a dialectical leap in the growth of technology in other words the technological revolution is becoming a permanent revolution We are to a certain extent the children of our age and in substantial measure technology is determining our consciousness.

This development model!

However important it may be, technology represents one segment of the dimensions of progress. Technology exists and thrives in a certain social framework and the human welfare implications of technology are determined substantially, if not in full measure, by the framework. Technology represents the productive forces whereas the production relations are determined by the social framework. There is a dialectical interaction between the productive forces and productive relations leading to progress, albeit by zig zags. Of course there may come revolutionary leaps in technology which may question the very *raison d'etre* of a basically evolutionary framework leading to a historical rupture of the framework itself. But generally technological determinism is not the rule though neither is technological nihilism. So let us give the broad contours of the Indian model of development so that an understanding of the backdrop for technological change is achieved.

The "Indian model of development" is unique in the entire third world. It rests on a pluralistic political foundation with various social classes and strata

making their impact felt through universal franchise. The economy is guided by the "mixed economy" model where a strong public sector controlling the commanding heights co-exists with one of the strongest private sectors in the third world. Of course there is evidence that the fundamental laws of motion of society are based on private property and hence the laws of the market place and capitalist development make themselves felt. During the 37 years or so of independent development India has grown at a "hindu" rate of growth of about 3.5 per cent per annum. But yet between 2/5ths to half the population lives in conditions of absolute poverty. Still there is no large scale questioning of the formational model. Through the tactic of social compromise and reform the Indian elite has by and large defused social tensions This is undoubtedly what it can be proud of.

And let's face it !

Now it is known that human welfare in terms of a set of social indicators or income distribution pattern is to a large extent dependent on the model and dynamics of a certain model of development rather than by mere technological forces. For example—in China, Cuba and other countries basic human needs seem to be met though the absolute level of technology is low. On the other hand in advanced countries like the U.S. in spite of very high technological levels there are people, albeit a small fringe minority, living in poverty. So human welfare seems to be to a certain extent independent of technological dynamics. Of course, it has to be kept in mind that the political choices available even to the poor in the American society are not available to the people in communist countries.

One of the jokes which makes rounds in Moscow runs thus : an old man walked up to the President of the Soviet Union, showed him a pumpkin and said, "Sir kindly select a pumpkin" The President replied "You fool how can I select a pumpkin when all you are offering is one pumpkin". The old man a rustic peasant responded—But Comrade don't I "elect" you even though you are the only candidate in the "elections".

So if on the whole human welfare measured in purely economic terms seems to be independent of technology in substantial measure then what is the human condition dependent on ? The answer obviously lies in the social system. Now in India we have a society which is developing on a capitalist path which by its dynamics perpetuates and reproduces in expanded form inequality and poverty. The rich and the middle classes get better off whereas the poor either sink to lower depths or are left untouched Of course, there are anti-poverty programmes but they do not tackle the roots the problem and are merely treating the symptom.

Now that being the nature of the model of development can be hope, by playing with a cocktail of technologies, to alleviate human misery in this country ? In my view this view is utopian. Fundamental shifts in the nature of technological choices cannot take place without a fundamental realignment of the social and political force configuration in this country. Peripheral changes in the choice of techniques will have peripheral changes in the standard and mode of living. In other words, technological choice *is not a key determinant* to poverty eradication. Poverty eradication is a question of political economy, a question of political will to bring about a qualitative shift in the model of development. The model of development as in India to-day is not conducive to a revolutionary sweep of poverty. But even within the framework alternative approaches are possible.

The alternatives, their impact !

By the end of the 70s hectic discussions and seminars were held in India and abroad on the priorities of development. The Nehru Mahalanobis model or the Indian strategy of development came under fire since it was not in a position to solve the basic economic questions which stood before the Indian people. Poverty grew and unemployment was not liquidated All this led to a strengthening of the influence of a school of intellectuals who searched for a solution to the economic problems of India outside the Nehru-Mahalanobis strategy. These discussions and debates got a strong push during the Janata party regime. Undoubtedly, the debate will have an international implication and is likely to influence thinking on the subject.

This debate was not confined to India's boundaries. In fact the entire developing world were engulfed in the debate. The various U.N. Organisations and also the World Bank took a keen interest in the debate. This facilitates us to make an inference that probably the debate reflected the developmental processes of the third world countries for the past 15—20 years and they almost simultaneously came to the state of development which was not very dis-similar to the stage of development which India was in. The questions which are debated are significant from the point of view of economic history. Other large countries like USSR, USA, France and England had international situations and also independence on their socio-economic systems. The correctness of the answer which the Indian bourgeois gave 25 years ago was put under doubt during the course of the discussion. Here we shall critically analyse the main arguments of the various parties. Naturally, the discussion was general, strategic and engulfed the direction of the development of the country in general.

A closer look . . !

The Nehru-Mahalanobis model was prepared under the influence of the feldman model which was worked out in the Gosplan in the 1920s. The essence of the model was an hypothesis the priority investments in heavy industry was pre-condition for high growth rates in the long term This analysis was based on the

Marxian theory of reproduction. The fundamental position of the author was that ceteris paribus the potential growth rate would be higher in correspondence with the investment in the creation of capacities in heavy industry. In the 50s and 60s bourgeois economic literature was dominated by an axiom that with a sufficient growth in production the problems of distribution will be automatically solved. Affluence of a few was seen as a *sine qua non* for savings which after being translated into investments must result in growth or as Mahbubul Haq put it in 1963 "the road to eventual equality possibly lies through initial inequalities".

At the end of the 60s and the beginning of the 70s it became obvious that a large part of the population in developing countries of a capitalist orientation did not gain from such a strategy of development. At the beginning of the 70s almost a billion people were living under conditions of absolute poverty. Having this in view at the beginning of the 70s new approaches were made to economic developing underlying "Grass-root growth" "Participation" and "Employment orientation". Also "the basic need strategy". The appearance of these approaches is considerably facilitated by the fact that the more far seeking scholars understood that in the absence of reform class struggle would have been intensified. The summit session of the non-aligned countries accepted a resolution appealing to "liquidate unemployment and poverty" through the realisation of political reforms and "satisfaction of basic needs."

This basic needs strategy !

The basic needs strategy was proposed by the International organisation of labour at the Conference on employment (1976). This approach was also supported by the International Bank for Re-construction and Development, and also the Organisation of Economic Co-operation and Development. This strategy emphasises that satisfaction of basic needs as a final aim of development and creation of employment as a means for the satisfaction of basic needs. So the accent was on finding a solution to the problems of absolute poverty through increase in employment. According to this strategy the purpose of the plan was to be indicated in such directions as health, education etc., which has immediate implications for human life. In other words, the criteria of investment in this approach is the improvement of the quality of life.

The strategy underlines the consumption of goods and services necessary for the satisfaction of basic needs Edwin Martin, the Chairman of the IBRD—Committee on the Question of Grain Production in Developing Countries put the question thus "Increase in incomes of the poor is necessary. Programmes of redistribution are promising in these countries but the emphasis is on using labour incentive technology in all economic sectors. Having in view the labour surplus a higher growth of the gross National Product would firstly help those who are suffering most from starvation." The World conference on employment declared as a fundamental principle "strategies and plans of national development must include as an important objective increase in employment and satisfaction of basic needs of the population." Also, a group of 20 economists headed by Jan—Tinbergen in its report to the 'club of Rome' appealed for global conciliation between the rich i.e., developed capitalist countries and the poor i.e., third World countries, for achieving the following objectives by the end of the century.

(i) Continuity of life 65 years or more ;

(ii) Literacy 75 per cent as a minimum ; and

(iii) Coefficient of birth less than 25|1000.

This group considers that for achieving the above objectives there is need for 'aid' to the extent of 15-20 billion dollars annually for developing countries in the west and Japan. Also, it was underlined that the objective of economic development was not in growth of GNP but in the growth of human welfare. This, in my opinion, is quite a correct assessment, it being testified by the experience of Kerala where the left democratic government was in power for a long time.

A pessimistic scenario !

Unless we adopt a new strategy aimed at strengthening and reorienting the Public Sector with emphasis on labour intensive and frontier areas as also develop technologies for dry land farming and the informal sector in addition to skill development in the Cottage industries the scenario at the moment is weak. According to present estimates about 500 million people will be under the poverty line by the end of the century.

There are only two ways of ending poverty—(i) a revolutionary qualitative shift in the mode of production which may end a pluralistic society and (ii) an evolutionary but qualitative shift in the model of development by making it more responsive to the needs of the poor. To a certain extent catering to the needs of the poor is in the interests of the preservation of the system itself. Even such a shift will require a shift of the technological focus to cottage industries, dry land agriculture etc. A total return to labour intensive methods is neither possible and is anyway utopian. The need of the hour is a cocktail of technologies which will maximise employment and minimise poverty without fully sacrificing the objective of growth The public sector could become the locomotive in such a reorientation of strategy. But, within the present contours it is difficult to foresee such a change. The alternative is one of secular stagnation of the needs of the poor. The scenario is not optimistic.

Technology now must form part of IRDP

T. Balakrishnan

Ending the existing dualism, rather quickly, in the rural sector—a small segment being forward looking, ever ready to assimilate new ideas; and all the rest traditional and static—should be our prime business today, says the author. We can do it, he adds, through a well-planned action programme designed to take science and technology nearer the rural poor. Let's, he argues, then make technology an integral part of our Integrated Rural Development Programme.

INTEGRATED RURAL DEVELOPMENT has come to stay as one of the major planks of our development process and effort. With the modest beginning made through the inauguration of Community Development Projects early in the First Plan period—modest only in the sense of spatial coverage and financial outlay—the groundswell of enthusiasm and intensity of commitment with which the projects were launched was almost un-precedented. The idea has taken root, blossomed, and spread steadily with an increased and increasing scope of action.

The Programme in its present form, initiated in 1978-79 in 2300 development blocks in areas covered by some special programmes, has been extended from 2 October, 1980 to all the blocks in the country, and is a part of nation-wide 20-point programme.

The gains and the lacunae!

Statistic relating to Integrated Rural Development Programme are, indeed, impressive :

The VI Plan budgetary allocation. shared equally by the Centre and the States, is Rs. 1500 crores ; added to this investment is the institutional credit mobilised to the tune of Rs. 3000 crores.

In physical terms, the Programme aims at providing productive assets to 15 million identified families below the poverty line during the current Plan period.

Per-capita investment under IRDP, taking all-India figures, increased from Rs. 1642 in 1981-82 to Rs. 3201 in 1983-84.

Achievements of the physical and financial targets in the first four years of the Plan period were impressive, giving encouragement and impetus to a much larger outlay and coverage during the VII Plan.

Behind these comforting figures, however, there lurk some important lacuna noted during the process of continuous evaluation of the programme. For instance ·

Some of the schemes implemented did not have the capacity to generate sufficient income to help the beneficiaries cross the poverty line—the basic objective of the Programme.

Required infrastructure has not always been created to ensure that the productive assets are put to optimum use and the projects continue to be viable.

Necessary technological support in the sphere of Industry, Services, Business (ISB) component of the programme has not always been given, and entrepreneurial development requires greater attention.

Modernisation of the traditional rural industries has not been *sufficiently attended to.*

One of the main reasons for these shortcomings is lack of extension of available appropriate technologies to sustain and advance integrated rural development A widespread and systematic advancement of such technologies as an essential input to rural development is thus urgently called for It is not that this is a new discovery. Right from the inception of planned development in our country, focussed emphasis has been laid on the crucial role of science and technology The Government of India also enunciated a specific Scientific Policy Resolution way back in March, 1958. Given thus the requisite encouragement and support, impressive strides have been made in our country in the development of science and technology. Nevertheless, their opportunities have been availed of only by limited groups and their benefits to the rest of the community, especially the consumers of integrated rural development programme, have been but incidental The technology policy statement of the Government of India issued in January, 1983, specifically stresses the importance of extension of technologies for accelerating the pace of rural development and widening its horizon. Since the VII Plan is on the anvil, now the time is to take up this task in all earnestness, as an in-built component of rural development endeavour, so that the achievement of the central object of development viz., establishment of the best possible biological and socio-economic environment for every man woman and child in the rural areas, can be realized with the assistance of the knowledge offered by science and the powers given by machinery.

Ending this dualism!

The goal of enriching, stimulating and accelerating the rural development process is to improve the levels of living of the people. The internationally accepted components of levels of living are education, health, food consumption and *nutrition*, housing, social security employment and conditions of work, clothing and recreation Social action to bring about improvement in all these sectors by public agencies and by voluntary institutions should be assisted by the tools of science and technology. This would require an integrated body of information, research, development, execution and evaluation It would also be necessary that sectoral actions in these spheres should not be narrowly defined, and executed in isolation. All efforts should be made towards their integration and synthesis as part of the overall integrated rural development process.

Over time, planning and development effort has led to a kind of dualism even within the rural sector—one segment of rural society, which is 'modern' and forward looking, ready to assimilate new ideas and to make use of the opportunities offered by science and technology ; and the other—a much wider segment—which is still 'traditional', static and dismissed as unresponsive to change, whilst being denied the opportunity to benefit by the knowledge of modern science. These two social systems in the rural scene co-exist and function independently of each other. Advancement of appropriate technology to rural areas should aim at removing this dualism.

There is another kind of dualism in the technological scene. A near-primeval technology, especially in the sphere of rural development, co-exists with a modern sector with large-scale plants and highly sophisticated capital-intensive technology. The idea is to bring about improvement in the former, which would be a complement to, and not a substitute for, the latter.

Hence, the concept of appropriate technology. This term is sometimes misunderstood to mean some kind of second-class technology. Rather, the way it has been propagated give rise to, or confirm such an apprehension. This is not so. To quote from the Sixth Five Year Plan document :

> "Rural technology should not be taken to mean primitive technology or technology of yesterday. A determined effort is needed to take modern science and technology to the rural areas, so that it is brought well within the material, financial and skill resources of the rural people. It will be simplistic and dangerous to confine indigenous efforts to relatively simple technology for rural needs and to depend on import of technology in the high technology areas. We have also to ensure an appropriate mix of small, medium and large-scale technologies in a manner consistent with our long-term interests".

In decades of development endeavour, a plentitude of schemes and projects of diverse descriptions and names have been, or are being, tried out by a multiplicity of agencies in rural areas. Almost all of them suffer from the defect—and hence the lack of impact—of being 'imposed from above,' regarding the 'beneficiaries' as passive objects of development instead of creative makers of it. Now that the possibilities that science offers are sought to be purposively brought to bear on rural development, they should be expounded in such a way that the people understand them and have a real say in the way in which they would like to make optimum use of them. Indeed, involvement of local artisans should go

a step further. Expression of their creative intelligence through interaction with scientists should be encouraged. Such artisans do have several innovations and practical suggestions to make, particularly with regard to the local situation and specific problems.

Assessing technology

Scores of technologies have already been developed by the Council of Scientific and Industrial Research (CSIR) and its laboratories and various other research institutions both at the national and at the state levels, i.e. R&D organisations of various all-India Boards and the KVIC. These apart, numerous other agencies, and even individuals, have developed technologies relevant to rural development.

A careful assessment will have to be made of the various technologies invented with reference to the development aims pertaining to specific areas, needs and requirements of the society, its economic and skill base, the existing socio-cultural background and the like. Assessment, purely based on engineering and economic yardsticks obviously would not suffice. The financial, organisational, managerial and other inputs like energy, etc. will have to be taken into account and long-term social goals kept in perspective. Though this may seem a truism to state, like many things obvious, this aspect often tends to be neglected.

In technology assessment, the following broad criteria are suggested to be kept in view :

The technology must be adapted to local cultural and economic conditions.

The tools and processes utilised should be under the maintenance and operational control of the local people and whenever possible, the technology should use locally available materials

The technology process should be ecologically sound.

The appropriate technology process should constantly be innovative in order to improve the human and material conditions of the local people through the use of new organisational and technological devices.

The cost of technology used should take into account the low-level stagnant finances of most of the rural population.

Even the most perfectly designed and superbly executed technology cannot last, if it is not, or cannot be, integrated into the village society.

Identification of technology need has to be a two-way process :

the demand coming from the ultimate users ; and

perceived needs based on the empirical findings of various technical institutions.

The planning phase

It has now been well understood and recognised that the practice of considering science and technology as a separate sector should be given up, and that endeavour should be made to ensure that the bulk of science and technology effort becomes an integral part of planning for all economic sectors. In other words, science and technology should be incorporated into the profiles of planning: their induction in promoting developmental effort should inform the various stages of the planning process. This has particular applicability to the area of rural development.

Various technologies are available—from the 'elementary' ones to those in the 'frontier' line—which could, with advantage, be employed in the execution of the various components of integrated rural development. The suggestion is that this should be done in the stage of programme planning itself. For instance :

In conserving water resources and ensuring better water management and soil use, instead of the conventional, time-consuming ground survey of water-logged, saline or alkaline areas, the services of the National Remote Sensing Agency could be utilised.

In constructing rural roads under the Minimum Needs Programme, the low-cost technique for rural road development design by the Central Road Research Institute could be of use.

In the supply of potable drinking water to problem villages, solar stills for distillation of brackish water developed by the Central Salt and Marine Chemical Research Institute could be of relevance.

As regards biogas for rural communities, the new developments in integrating biogas units with the human settlements, propagated by the Housing and Urban Development Corporation (HUDCO) may be of interest and use.

It will do well to remind ourselves at this stage that integrated rural development is not only an aggregate of diverse schemes but is a basic concept, which should at all time influence the choice of programmes and priorities, and the manner and sequence of their implementation. In brief, the following may be kept in view :

Integrated rural development calls for a set of projects and policies so designed and coordinated that it will raise the whole pattern of living of a given rural population from one level to a markedly higher level within a few years, and will, in doing so, create a society which will thereafter be economically and socially dynamic.

Integrated rural development is the conscious and systematic consideration, evaluation and

manipulation simultaneously of the components and linkages of the rural system to achieve a planned development objective.

Since in a rural society, the development process confronts a plural value system, characterised by equally valued primary goals, the objective of integrated rural development, is accommodation to the realities of a plurality of primary and instrumental objectives.

Adoption of scientific principles of planning and management to keep in tune with these and other complex components, would also be necessary.

The crux of the matter!

This, really, is the crux of the matter. Many technologies have been developed relevant to rural development, both in the sphere of increasing production, productivity and employment generation, and in the area of human welfare, community services and reduction of wastage and drudgery. Nevertheless, these have rarely percolated to the field. Efforts in this area have been but scattered and sporadic

There would be no need to establish a separate 'delivery system' for this purpose. Best use could be made of the existing institutional infrastructure created by various organisation like National Research Development Corporation (NNRDC), KVIC, District Rural Development Agencies (DRDAs), District Industries Centres (DICs), Small Industries Services Institutes, IITs, Polytechnics and the like.

In the technology transfer process in the rural industries sector, DICs—which unfortunately have had a rather chequered career—could make a valuable contribution. Set up to provide assistance to rural artisans, village and small industries at the pre-investment, investment and post-investment stages of production under one roof, the DICs could be a good institutional mechanism for transfer of technologies, in addition to conducting industrial potential surveys, supply of raw-materials, machinery etc., and assistance in marketing. Here, a close working relationship between the DRDAs and DICs will have to be forged.

In order to involve the locally available scientific talent in the dissemination of technologies to rural areas and to provide necessary interaction between the project administrations and the scientific community, a district-level Committtee of Science and Technology may be constituted. It could consist of the Project Director of DRDA, General Manager, DIC, Principals of Engineering Colleges|Polytechnics| IITs, Professors in Science Colleges, representatives of leading voluntary agencies and the District Manpower Officer. The State Department for Science and Technology and Rural Development may provide the required support and guidance to these District-level Committees.

The institutional 'balance sheet'!

Various institutions could and should be involved in the process of transfer of appropriate rural technologies. In fact, a number of 'structured' institutions have been engaging themselves in this task. On a review of their work in this behalf, an institutional 'balance sheet' has been attempted and presented below :

Type of Institution	Plus points	Minus points	Needed changes
Universities/IITs	Possess diverse highly competent technical manpower resources, quality of research impecable	Rural technology research still not generally accepted as a 'legitimate' function of these centres of excellent resources for this activity may not permit an action focus, these institutions usually have a strong urban bias, organisational innovation in the highly structured set-up difficult to obtain	Exposure to actual field conditions by means of adoption of villages, involvement of selected faculty members and research students in the actual transmission of technologies; linkages with voluntary organisations engaged in the same pursuit
National Laboratories	Availability of scientific personnel of competence, possibility of specialisation and welldefined problem focus	Often do not have required connection with application of research findings, possibility of too narrow a specialisation, inadequate appreciation of the rural scene, especially the sociological and cultural aspects on acceptance of new technologies	Closer links with extension agencies and greater exposure to rural realities, problem-oriented rather than disciplime oriented internal organisation

Type of Institution	Plus points	Minus points	Needed changes
DICS/DRDAs	Alive to actual field problems, needs and possibilities	Lack of R&D capability; limitation or organisational resources, diffusion of functions (the last mentioned applied to DICs)	More direct and continuing linkages with R&D capabilities, strengthening of man power resources; revision of performance criteria (the last-mentioned applies more to DICs)
Polytechnics 8	Quite alive to actual field problems, needs and possibilities, availability of a vast reservoir of skilled technicians and craftsmen, including a large body of student population	Absence of R & D capability constraints on financial and organisational resources; lack of technical guidance; plurality of functions.	More direct and continuing linkages with R&D capabilities strengthening of resources and revision of performance criteria

The attempt now should be to .

—strengthen capabilities of institutions already working on appropriate technology questions.

—diversify functions of institutions with capabilities that fit appropriate technology issues, but are not currently being employed in that manner

What CART does

One of the main reason for establishment of CART is to make the endeavour of transfer of technology to the rural people speedier and systematic. Its objectives, include :

(i) To act as the national nodal point for coordination of all efforts of development and dissemination of technology relevant for rural areas for sectors other than those covered by ICAR and its sister bodies ;

(ii) to act as a catalyst for development of technology, appropriate for the rural areas, by identifying and funding research and development efforts by different organisations ;

(iii) to act as a clearing house of information and a data bank ;

(iv) to disseminate knowledge of rural technology to manufacturers of machinery, tools, equipment and spare parts so that large scale production of technically improved machinery etc. is carried out in the private, cooperative and public sectors ; and

(v) to act as conduit for transfer of appropriate technology to government departments, public sector undertakings and members of the public.

The Council became operational only at the commencement of the current physical year. As an immediate measure, some selected technologies have been chosen in the priority areas indicated in the technology policy statement of the Government of India and steps are taken to disseminate them to identified spatial areas, through whichever institutional agency is found most effective in that particular area.

On this basis, the Council has so far accorded financial assistance for 18 projects with an aid-component of a little over one crore. These projects are designed to improve the levels of living and elevate, to greatest extent possible, the quality of life of the poorest of the rural poor.

It is recognized that in the process of transfer of technology, a fundamental pre-requisite is to build up an information system and data bank. The information should be appropriate, accurate, adequate, timely and organised. CART is engaging itself in the establishment of a data bank, development of a subject-oriented documentation system in the wide range of rural technology, surveys for the assessment of information needs, information retrieval and analysis, and user education. In course of time there might be need of such a documentation system being built up at the regional and State levels too.

Seek, and ye shall find,
There is something to be found ;
Here now is a cart,
Look, the wheels go round.

—A ZEN VERSE

Priority for energy conservation

THE SEVENTH PLAN working group on science and technology has identified sixteen "thrust areas" including agriculture, biomass, fertilizers, energy conservation, power, health, conventional and non-conventional energy sources and metals for intensive Research and Development work.

In the field of agriculture, the group observed that further applications of fertilisers might not necessarily result in higher agricultural yield. It recommended to introduce biomass to help productivity. The group also thought that in the agricultural sector, a lot of water and fertilizers were being used. These could be reduced substantially through better technology application in the sector □

Learning to own technology

S. S. Kalbagh

The poor taking to technology is an uphill task and what is urgently needed today is the initiation of the process of preparing the poor to own technology for their own sake. The way, says the author, lies through education of the right type, and how it could be done he describes here.

THE NEED FOR RAISING people above the poverty line is urgent and great efforts are focussed on identifying technology that can help in this. It is therefore necessary to understand the different facets of Technology Transfer to ensure that we search in the right place for suitable technology and the ground is prepared for it to take roots.

The technology ladder

When a technology is transferred, we refer only to the Technology Package. Every Technology Package implies availability of a certain level of skills, both technical and organisational, that are available to the user. If there is a mismatch between the technology package and the user's skills, the technology will fail. The Technology Package is like a school text book; a fifth standard boy can make little sense from the 8th standard book. So the different technologies can be arranged according to the level of skills presumed to be available to the user. This grading can be considered as a Technology Ladder. Every user, whether an individual, an organisation or a society|community, can benefit by technologies that match his|their skills. After he uses these for some period, his level of skills rises and he can then reach for higher technology but not before.

When we make public a technology, such as the use of high yielding varieties of wheat and rice, only farmers with a certain level of skills benefit by it. Others will end up in disaster, even if the government arranges all the financial inputs. Thus the green revolution benefited farmers who were already familiar with some modern practices and the less skilled, usually the poor, were left high and dry.

Thus if we want to take the poor above the poverty line we must extend our technology ladder downwards, below the technology of high-yield agriculture.

The return on skills employed

A financier always calculates return on capital employed. He will want to invest his capital where the returns are maximum. Every individual has acquired various skills. These are his capital. He employs them on his job and gets a return on the skills in the form of his salary. As he becomes skilled through experience and self effort, if the returns don't increase, he takes another job, where his higher skill is utilised and he gets a better return or salary. This also applies to industries and even societies as a whole. As an industrial house acquires experience and skills, any of the simpler operations it started with

are no longer attractive to it. In fact because it now has a more skilled labour force, naturally better paid, it cannot afford to get the less skilled jobs through them and therefore gives out these jobs on contract or otherwise to others with lower levels of skills. Thus we have the concept that any group operating some technologies will, sooner or later, find the return on skills employed to be diminishing and therefore will be forced to move up on the technology ladder to remain competitive. They will thus vacate the technology for people with lesser skills. This is happening on the national scale, where India is now exporting machines to U.S.A. because they do not find it economical to make them themselves.

So when a user chooses technology, he cannot take one that is too high up on the ladder, because he does not have the skills; and he will not choose one too low also, because the returns on his skills will not be adequate. It also means, once you get on the technology ladder, you can move up, as somebody else vacates the technology above yours. Everybody can keep moving up.

The technology culture

Let we now see what are the skills that are required even at the bottom of this technology ladder, because without these no one can benefit from even the simplest of technologies. These skills are so fundamental that most will not even recognise these as skills to be acquired through education—formal, non-formal, or incidental. In fact when a sophisticated industry is located in a backward area, they face a training and discipline problem, which they blame on lack of industrial culture, but is really a lack of skills.

These are the basic skills that need to be given, through education, right from primary education and some even from preprimary stage. This education must enable them to get on the technology ladder and learn how to climb up, by themselves.

Let us enumerate some of the important skills that they should acquire and which should be so ingrained that they become an "instinct" and part of their culture.

1. *Communication* : This is so fundamental a skill, yet it is sadly lacking in most. Very few can report an incident coherently by themselves or convey a message accurately. Equally they cannot understand a sequence of instructions and follow them.

Adding to the problem of communication, is the ignorance of some simple concepts such as rate, efficiency, etc.

2. *Visualisation* : This is another skill that is acquired through practice and is fundamental to creativity, planning and many other key activities.

3. *Sense of "Geometry"* a feeling for directions, parallels, equidistance, right angles etc.

4. Classification and pattern recognition

5. Ability to concentrate on the job in hand

6. The three Rs—Reading, Writing, Arithmetic

These are very basic skills that can be acquired through practice. Of course, there would be differences between individuals, but there should be a minimum that every one must reach. These are the skills that need to be imparted from the primary education stage.

Learning by doing

How can these skills be imparted? Certainly not by textbooks. These are skills learnt by doing. Learning by doing is something more than on-the-job training. When the mind stops working, the hand can activate it; this is the role 'doing' has to play in 'learning'. For most of our primary students, this will also be an easier way of learning.

Learning by doing implies use of materials, mistakes made, time taken. Yet in the long run, it will work out cheaper, because it is a surer and more lasting educational method.

Integration of education with development

Learning by doing implies use of materials and investment in time—therefore higher cost. This can be more than offset by using a productive activity or a development project as a substrate for the educational process. This is particularly important in the 15-25 age group where the skills taught are more sophisticated But the idea is also applicable to the 5-14 age group in the primary school.

As an illustration, let us consider some productive activities, which can be used to integrate the development of mental skills, the manipulative skills, and creation of wealth.

1. *Collection of waste material* : e.g. animal dung, weeds, oil seeds from trees, seeds of leguminous plants, scrap paper, plastics, metals etc. The activity of collection, segregation, grading etc. provides for 'learning by doing' of the following mental skills viz; communication, visualisation, classification, measurement and also encourages qualities such as perseverence, competitive as also collaborative spirit. Economically it is beneficial to the society, because it enables better use of waste materials, dung for biogas plants, scrap for sale, legume seeds for poultry feed, weeds for composting. The same activity also develops physical skills by teaching how to handle large loads, compacting, baling, grading, grinding etc.

2. *Raising nursery plants* : Children can raise and care for not only seedlings for social forestry but also vegetables for the kitchen garden. They can

learn observation, recording, sketching, and learn soil types and properties, physiology of germination, handling and use of pesticides, importance of irrigation methods, sunlight etc. It will be socially beneficial, not only generating ecological sense but also for introducing hybrid vegetable seeds etc.

3 *Poultry & Goats* : Care of poultry and goats is normally done by women and children and provides an excellent opportunity for education in various subjects, including nutrition, health, arithmetic, nature study, and skills such as making baskets, nets, fencing, etc. Also it gives an opportunity for introducing better breeds, crossing, different rearing systems etc.

4. *Brick making* · Brick making by moulding soil-cement blocks is an excellent way for giving the basic skills and producing something useful. It also gives a feel for the productivity concept.

5. *Weaving, sewing, knitting and netting* These are other technologies that primary school students can practice for education and benefit to the society.

The above technologies should be taught, not so much as money making activities, but primarily as educational media. They will produce sufficient physical assets to pay for the cost of materials used, but their educational effect will far outweigh the wealth produced. This is only an illustration of activities and different areas could plan many other technologies for similar effect

This kind of education can blend with existing school curriculum, if the system is made more flexible. All the subjects, reading, writing, arithmetic, history, geography and science, can be taught through such activities. □

(*Continued from page* 6)

Taking technology to the poor

directly extended to field conditions and appropriate training would have to be provided to the village workers and others who have to actually construct their houses using their own hands and available local materials It is unfortunate that in some of the cases where technologies generated in the laboratories are not transferred and assimilated amongst the people for whom they are generated It is this aspect of the technology utilization which requires better attention and commitment from scientists, engineers, planners decision makers as well as the local managers and village leaders who have to establish close communication with each other if the technologies from laboratories have to reach the field. In this context the various experiments and programmes entitled "Lab to Land" initiated by Indian Council of Agricultural Research are relevant and this approach may have to be perhaps, extended to various sectors of development.

And the challenge!

In the above paragraphs few selected sectors of social economic development have been chosen to illustrate the important role which can be played through generation, application and propagation of technologies which can be beneficial to our large rural population and the weaker sections of our society Unfortunately, generation of technology is only one end of the total developmental chain Not only strong linkages have to be developed amongst the various sectors of the developmental chain but it has to be ensured that inputs required to strengthen each link of this chain are provided in adequate measures and in time. These inputs are in the form of financial resources, managerial resources, material resources, manpower training etc. It is thus clear that only when the total developmental chain is strengthened through the measures indicated above can one hope to fully reap the benefits of the technologies which would be generated at one end of this chain. There is no doubt that application of technology is an important element for improving the quality of life of our masses but it must be realised that this is not the only panacea to our problem of national development. During the seventh five year plan, all Science & Technology agencies, laboratories, universities, IITs and other academic and research institutions are expected to analyse the contribution that they can make to rural development and devote an appropriate part of their resources and effort for it. If these efforts can be orchestrated in the total context of the socio-economic development, the basic objectives of our Scientific Policy Resolution, of securing for the people of the country all the benefits that can accrue from the acquisition and application of knowledge, will be met in the not too distant future □

Investment on science and technology

INVESTMENT ON SCIENCE AND TECHNOLOGY has increased from Rs. 20 crores in the First Plan to Rs. 3,367 crores in the Sixth Plan.

Following the enlightened public policy, India has today over 2 million scientists and technologists This is the third largest number any country has in the world

Rural India is clamouring for benefits of science and technology. The vast reservoir of science and technology i.e. trained and skilled scientific talents that India has today, can change the face of the country if it is exploited for improving the utilisation of material and human resources thus raising the living standard of the rural population.

In the field of agriculture, science and technology has created the required production potential. It is the inputs and the management which can now bridge the gap between the potential and actual. This process of bridging the gap between the potential and the real can very well be hastened if scientific temper is resorted to as the most important input and allowed to permeate every Indian life.

The bullock cart and the rural poor!

N. S. Ramaswamy

Making out a forceful case for proper realisation of the role of Draught Animal Power (DAP), particularly bullock cart, in alleviation of rural poverty, the author asserts that it is our "poverty of ideas and concepts in S&T and O&M to meet the requirements of the poor in the non-OS largely responsible for the poverty of the masses. Poor people and animals—both dumb and helpless in many ways—watch the spectacular success of S&T and O&M in the organised sector. They hope that their chance also will come sometime, hopefully, in the Seventh Plan."

INDIA CAN LEGITIMATELY be proud of her achievements in various fields such as, quantity and quality of scientific and technical manpower, self-reliance in industrialisation, acquisition of knowledge and skills in space and nuclear fields etc. But, in spite of vigorous efforts on the part of the Government, we have not been able to channelise the inputs to, and benefits of, development to the lower one-third of our population, who continue to struggle below the poverty line. No amount of sophistication in high technology is a solace to the deprived millions.

It is against this context that we have to look at the role of Draught Animal Power (DAP), particularly bullock cart, in reducing poverty by increasing employment and earnings of those dependent on DAP for livelihood.

Why poverty persists?

To the modern intellectuals, bullock-cart is a symbol of backwardness. During the last ten years, a great deal of interest in DAP has been generated by the work done by Indian Institute of Management, Bangalore, and many other in modernising the DAP system. But the progress, alas, has been at bullock-cart pace only, mainly on account of lack of policy and financial support from leaders, planners, administrators and institutions concerned with rural development.

The basic reason why poverty and privation persist is because inputs of Science and Technology (S&T) and Organisation and Management (O&M) are largely concentrated in the organised sector, which forms only

twenty per cent of the working population. Out of about 280 million people in the work force, only about 60 million could be considered to be in the organised sector; the balance 220 million being in the so-called informal, decentralised, dis-organised, unorganised or non-ogranised sector—hereafter referred to as non-OS. Most of the poor people are in the non-OS, whether they be in urban or rural areas.

The instruments of production of those in the non-OS are crude and inefficient S&T and O&M—critical resources for productivity and development—are not available to this vast non-OS Only by upgrading this instrument of production by applying S&T and O&M, we can hope to elevate the economic status of those now below the poverty line. The state of affairs in DAP and bullock-carts is classic example of the pathetic conditions existing in the non-OS, where millions are eking a subsistence existence, due to low productivity. It is also a reflection of our distorted priorities and inability to manage and develop the non-OS.

DAP, how useful !

DAP is an outstanding example of mass application of appropriate technology. DAP is complementary to mechanised system, i.e., tractors for ploughing and trucks and vans for transportation. While the ultimate goal should, of course, be one of mechanisation and automation, we may, unfortunately, have to depend on DAP for fifty more years to come Herein lies the need for upgrading the DAP system in order to increase its productivity through S&T and O&M inputs.

It would be useful to have a broad idea of the order of magnitude of contribution of DAP to the Indian economy. Besides young stock, there are 80 million work animals or draught animals (DAs)—70 million bullocks, eight million buffaloes and one million each of camels and horses. On the basis of an average of half horse-power per DA, they make available about 40 million horse power, and that too in as many locations. DAs provide power to plough two-thirds of area cultivated. Two-thirds of rural freight is also carried in bullock-carts In most villages, carts are the only means for passenger transportation as well

The market value of DAs, ploughs and other agriculture implements, carts and the associated infrastructure for manufacturing and repairs may be of the order of Rs 10,000 crores.

It has been estimated that there are 15 million animal driven vehicles (ADVs) in the country, most of them bullock-drawn. The market value of ADV system, including cost of animals, may be more than 5,000 crores of rupees It has also been estimated that the DAV system transports over twenty billion ton kms. of freight per year.

Replacement of ploughs by tractors and tillers, and carts by trucks and vans—which will possibly take place slowly over the years—may need an investment of over 10,000 crores of rupees

Nay, it is inevitable !

Incidentally, the UN|FAO system has recognised DAs as a source of renewable energy. DAs form part of milk-fibre-meat system. They also have an organic link with other systems, such as agricultural production, bio-gas, social forestry, environment, rural transportation, soil erosion, etc.

DAP system seems to be inevitable because we have over 50 million small holdings with less than one hectare in area, where tractors or tillers are uneconomical Similarly, for small-scale transportation of goods and people, over short distances of about 20 kms. and where travel time is short compared to loading and unloading time, ADVs are more appropriate than mechanised systems. Trucks and vans need heavy loads, and travel long distances to become economical. Fragmentation of farm holdings is continuing even now, and thus the need for DAs for ploughing would continue to be critical for many years.

The next issue, which ought to be clarified, is that we have to per-force modernise the DAP system, as otherwise depending on DAP system will continue to be poor. In other words, through modernised DAP and ADV systems we can generate more employment and earnings, and that too for the poorer and unskilled sections of our population. Wastages in the system and potential for improvements and benefits are described below .

Out of the estimated 15 million bullock-carts in the country, about 12 millions are village based, and about 3 millions are urban based. Rural based carts also ply between urban and rural areas, transporting inputs and outputs.

Cart, the old and the new !

The main features of traditional cart are ; large wooden wheels with iron rims, loose bearings made of mild steel, mild steel axle and ball bearings, wooden platform and pull beams made of wood or bomboo etc. There are literally thousands of designs, varying in capacity, size, structure, materials used etc. Carrying capacity ranges from half to one tonne. Cost of a double bullock-cart varies between Rs. 1,500|- to Rs 4,000|-, depending on capacity and quality of materials used.

During the last 40 years, major improvements have been :—

(a) pneumatic design introduced in the forties by Dunlop Company, incorporating steel wheels, ADV tyres made by Dunlop, taper roller bearings etc. By these three improvements the carrying capacity has been increased to three tons.

(b) Use of worn-out wheels, tyres and axles, salvaged from discarded trucks and cars. Carrying capacity is increased to about two tons.

(c) Special purpose carts for urban areas, mostly single animal -drawn, to carry water, kerosene and light materials.

(d) Four wheeled carts, as opposed to the traditional and popular two-wheeled ones, with hard and|or pneumatic tyres.

It has been estimated that about half a million carts have been modernised with the Dunlop design, and another half a million perhaps by way of folk improvements as in (b), (c) & (d).

Total number of carts in the country has remained roughly the same during the last ten years. Aim of modernistation would naturally be to fit all carts with steel wheels, smooth roller bearings and pneumatic tyres. The exception would only be for carts, which have to ply in slushy and mudy terrains, particularly in high rainfall areas. In China, all carts are fitted with steel wheels and pneumatic tyres.

How good the new one !

By introducing steel wheels, pneumatic tyres and taper roller bearings, cost may go up by about 50 per cent; but carrying capacity can be trebled, with less draught burden on the animals DAs can work longer hours, at faster speeds; they may also live longer on less work ration. At present, a good part of their draught effort is wasted due to high friction at the bearing and rolling surface as well as drag created by the iron rim cutting into road surface.

Such heavy duty carts are already popular in urban areas and for transporting sugarcane from fields to sugar factories Studies show that there is sufficient load in the urban areas for carts with two to three ton capacity. Where load availability is not that high, the idea should be to go for single-animal carts, rather than double animals. It may be noted that a single animal cart will be cheaper than double animal cart-both in terms of investment and recurring cost for maintenance of the animals.

Introduction of pneumatic tyres will almost eliminate the tremendous damage now being done to the roads due to the iron rim cutting into road surface Cost of repairs is estimated to be in hundreds of crores of rupees. Benefits to the society arising out of reduced damage to road will by itself justify increased cost of the cart or cost of modernisation at public expense

And the gains . . . !

Increased capacity means many other advantages as well. Earnings will go up by two to three times which will make it possible for the carter to feed the animal well. At present. earnings are low and, therefore, animals are not fed adequately In addition, since their draught power is wasted, they are unable to haul normal loads with ease or comfortably In order to goad animal to haul freight beyond their normal capacity, a variety of cruelties are inflicted on them-beating, whipping, twisting of tails, pricking with iron nails etc. Besides suffering to the animals, the value of skin is reduced considerably. It has been estimated that export value of leather can be trebled if the skin of draught animals is not bruised by such harsh treatment.

The next important improvement to be introduced is to reduce its tare weight. Trials have shown that weight can be brought down by 50 per cent, without affecting carrying capacity. Further, steel frames should be used in order to conserve scarce wood and also to add strength to the frame.

Provision of a brake is a must. At present, animals are using their neck to slow down and stop the cart. A smooth yoke, with provision for spring loading, would improve effectiveness of draught effort required, simultaneously reducing damage, now caused to the animal's neck.

Improvements mentioned above have already been proved to be feasible and beneficial. The main problem has been to make manufacturers and cartmen aware of the potential benefits of improved carts, which is the role of O&M, mentioned earlier A massive extension is required to implement these ideas and improvements to cover all the 14 million traditional carts.

Still better version !

The next major improvement, which has not been tried in India, and which is tremendously significant and beneficial, is the adoption of the Chinese type double-piece yoke In the south Asian design, the traditional yoke, which is often rough, sits on the neck of the DAs Third point of the load is the neck itself, the two wheels being the other two points. Besides hauling the freight, DAs have to carry a vertical load on the neck. Besides the draught effort wasted on account of this vertical load, the major damage is due to constant rubbing of the yoke against the skin. The neck of the animal is injured by way of neck sore, callosity etc. It has been estimated that millions of animal years are lost due to injured necks It is a common sight to see otherwise healthy animals being taken to slaughter because of injured neck.

In order to unerstand the double piece yoke system, one should visualise a single animal cart. The first yoke-a canvas trap-rests on a frame, which is fixed on the back of the animal. A soft pad between the frame and the skin protects the skin. The yoke carries the vertical load. The second yoke is a piece of rope, connected to the pull beam, which is placed around the neck of the animal. This yoke is used for hauling purpose only. When animal moves forward, second yoke comes into play. When it slows down or stops. the second yoke is decoupled. A back strap, like in the case of horse cart, taken round the rump of the animal, is used to slow down and stop the cart. The neck of the animal is thus used only for hauling, and there is no injury to the neck.

And still more gains !

There are many advantages to this device First of all, shock and rubbing on the neck are eliminated, and the vertical load is spread evenly on the back of the animal, thus increasing the effective draught power. Secondly, one or more other animals can be hitched to the cart, either by the side or in front, like in a dog-sledge in order to increase the draught effort for heavier loads to be pulled An interesting point to note is that the second and|or third animal can be of different species, sizes, strengths etc. This enables use of younger animals also Cows, which have stopped lactation, and male calves of buffaloes and cows can be put to work as the second animal.

This factor opens up tremendous possibilities for increasing utilisation of potential draught power At present, male calves of buffaloes are killed off, soon after birth, since farmers are unable to rear these animals up to the age of two, when only then can be hitched to carts. With the double piece yoke system, they become productive from age one. Five millions of animals, thus slaughtered prematurely, can be reared and used as draught animals. It is estimated that ten million farmers do not have DAs at all to plough. These young calves could be given to them, as part of rural development programmes which, incidentally, would increase agriculture production as well

Big and better use !

DAs in urban areas are utilised for more than 300 days a year. In rural areas, DAs are used only for about 100 days-about 50 days for plaughing and another 50 days for carting to nearby towns This means that DAs are not utilised for over 200 days in a year. Since DAs have to be fed throughout the year (unlike machines), feeding becomes a strain on the farmers, who, more often, keep them on maintenance diet, which means on semi-starvation conditions. With their health deteriorated, DAs are unable to plough with tease when the season starts. Again, they have to be goaded to work with torture methods. About 70 million DAs are thus under-utilised, or non-utilised, for most of the years, which is a great wastage to the farmers and to the economy.

Modernisation of the cart system opens up new possibilities to utilise these DAs for more number of days. First of all, with improved plough, single animal ploughing can be introduced in farms, which are less than one acre. There is no need to use two animals, as at present. Simultaneously, with an improved cart, a single animal can carry one tonne or more easily. During the off-season, farmer can take the DAs to urban areas for professional carting purposes. Even if we are able to generate 100 days of additional work during the off-season, by plying the carts in urban areas on a professional|commercial basis, 70 million DAs would generate 7,000 million mandays of work. Even assuming a meagre net income of Rs. 30|- per cart per day, this would generate Rs. 70,000 millions, i.e., Rs. 7,000 crores per year. This amount would accrue to marginal farmers and landless labourers as well as unskilled people in urban areas. A system of hiring of carts can be introduced in urban areas for thus helping landless labourers and unskilled workers

Opening new possibilities !

It is easy to introduce wheeled ploughs for dry farming. The concept of the dog-sledge system, described earlier for carting, can be introduced for ploughing as well. In India, we are used to double-animal ploughing. For both dry and wet farming conditions, an even-bar system will enable farmers to hitch animals of different species, sizes and strengths, thereby increasing draught power wherever necessary for deep ploughing or using heavy implements.

It has been estimated by the National Commission on Agriculture that power input to agriculture has to be doubled in order to increase productivity for optimum output. It is well-known that China is able to produce twice our output per hectare, as they have introduced improved cultivation methods, besides larger quantity of fertilisers per unit area. China has also been able to put up eight million bio-gas plants. India also has a programme, but we are unable to tap our potential due to lack of O&M. Bio-gas plants will upgrade the DAP system as a whole.

With cross-breeding programme gaining prominence in the country, there is a doubt whether male calves of cross-bred cows can be utilised for ploughing and carting. Studies have already proved that these bullocks are equally good for ploughing, if only they are used during morning and evening hours, and hot parts of the day are avoided. At present, male calves of cross-bred cows are slaughtered off, soon after birth.

And these buffaloes !

Buffaloes are excellent DAs. It is a pity that its value for draught purposes has not been realised in India, though buffaloes are popular DAs in Haryana, Punjab and Meerut division of Uttar Pradesh.

Camel carts are already improved, though there is scope for further improvements. China has a regular programme for breeding donkeys for carting in rural areas. They have been able to raise eight million donkeys for work. They can haul even half a tonne. India can breed donkeys and mules for carting in rural areas. In fact, mules and draught horses are better for carting in urban areas where they are faster.

The DAP system has a close link with other sectors|systems, like agriculture production, bio-gas, milk, meat, social forestry etc. The whole of DAP and associated systems have to be upgraded, which will benefit the poor a great deal. There is no national policy now to upgrade the whole system. Proposals for the establishment of institutions for upgrading

draught animal power system are under the consideration of the Government of India. The Indian Institute of Management, Bangalore, is preparing a report on the status of DAP, which will identify priorities and areas for modernisation,

And this slaughter system!

The DAP system would also get upgraded, if slaughter system is improved. At present, over 40 million large animals are slaughtered every year for meat. They are taken to slaughter houses on foot, which results in a great deal of wastage. Besides loss of approximately ten kgs. of meat per animal, animals are ill-treated enroute, which damages skin and lowers its sale value. Slaughter methods are also brutal and crude, which result in colossal losses to the country in economic terms, not to talk of untold suffering to the helpless animals. DAs suffer whilst at work and in death. It is a shame that a country, which reveres animals, is ill-treating them needlessly, with no corresponding gain to humans.

A proposal to set-up an Aniamal Board to promote and oversee all aspects of the animal system is under the consideration of the Government.

Agriculture University and Indian Council of Agricultural Research institutions are taking increased interest in modernising the DAP system. The Seventh Plan is expected to give a new impetus to this modernisation drive. Draught animals, ploughs, carts and other associated infrastructure for production and maintenance of implements and carts on the one side, and draught animals on the other are the main instruments of production of millions of poor people in India, particularly in the rural areas. By providing S&T and O&M to this sector, we can hope to make an attempt to remove pervasive poverty, now afflicting most of our population.

S&T and O&M, though they are sophisticated in India today, are not of any consequence of social relevance to the poor, in asmuch as they are not available for over 200 million workers and farmers in the non-OS, who need them more than the organised sector. Let us hope that the Seventh Plan will give some attention to this neglected sector.

The symbiotic relations!

Man, Animal and Nature are in symbiotic relations. Poor people depend on animals for livelihood. There is a direct link between poverty and the neglect of the animal system. By upgrading the system, we can make a dent on poverty. A great deal of attention is now being paid to the milk system. But the DAP and slaughter practices are neglected. Poverty of ideas and concepts in S&T and O&M to meet the requirements of the poor in the non-OS is largely responsible for the poverty of the masses. Poor people and animals—both dumb and helpless in many ways—watch the spectacular success of S&T and O&M in the organised sector. They hope that their chance also will come sometime, hopefully, in the Seventh Plan.

Promising technology identified

All India Coordinated Research Project on Harvest and Post-harvest Technology, has identified the following machines and devices, aimed at saving post-harvest losses :

Pea-punching device

To facilitate and quicken the dehydration of peas and also prevent its rewetting, a manual pea-punching device with a capacity of 10—12 kg|hour has been developed at Jabalpur. The cost of this device is around Rs. 350.00.

Cassava chipping machine

A device for chipping cassava with a capacity of 60 kg|hour (chip thickness of 5 mm) has been developed. This capacity is nearly four times that of hand chipping. Chipped cassava is dried for grinding.

Cardamom dryer

A tray-type cardamom dryer of 25—30 kg capacity costing about Rs. 10,000 (including motor and blower) has been developed. It takes 11 hours to dry cardamom from 80 per cent moisture wet basis to 15 per cent moisture wet basis, using hot air at 55°C. The operating cost is Rs. 55 per quintal of cardamom.

Bamboo bin for onion storage

A concentric bamboo bin of 300 kg capacity for storing of onions has been developed. The initial cost of the bin is Rs. 70 and storage cost Rs. 20 per quintal per annum.

Hidden infestation detector

A simple, low-cost device for detection of hidden infestation in grains has been developed. The device costs about Rs. 100 and takes only 10 minutes for one sample. Its performance compares favourably with the existing methods|equipment for infestation detection.

Pearler for millets

A one-hp electric motor powered Pearler for millets, costing Rs. 1700 has been developed. The operating cost of this machine is Rs. 2.70 per quintal against Rs. 54.00 per quintal in the case of traditional hand pounding. □

Appropriate technology in rehabilitation aids

P. K. Sethi

To provide rehabilitation aids to the persons who have lost their limbs anywhere in the country our profession will have to shed its prejudices by utilising the enormous reservoir of native talent available in every town and village. Such a strategy, the author asserts, will lead to the satisfaction of basic human needs, generate self-reliance, demystify medical knowledge, encourage social participation and advance developmental objectives.

ABOUT 20 YEARS AGO, we at Jaipur, decided to set up a workshop for production of appliances for the handicapped. Our objective was primarily to cater to the needs of the needest i e the rural and poorer section of our society. The affluent, we felt, could continue to go to Poona or Bombay and procure an artificial limb or a caliper at a cost which often exceeded the annual per capita income of a rural poor.

Our aims were two-fold. The appliances should be as inexpensive as possible and a patient should not be required to travel long distances to be able to get them.

Very soon, however, we started running into a contradiction. As is customary with us, we like to follow the trends in the West and the designs of our appliances were no exception. These were all conceived and developed in the West. We found, to our surprise, that most of our polio patients were not really using the calipers and many of our amputees were reverting back to crutches. This disturbed us and so we started closely questioning our patients to understand the reasons for rejection of these appliances. It was then not difficult to identify some very obvious features in the design of these appliances which made them quite unsuitable for the average Indian life style. For example, the foot-piece of a western artificial limb has to be hidden and protected by a shoe. Without a shoe, the limb cannot be used. Shoes are normally not worn by most Indians. If we want our artificial limbs to be used at home, by our women, by farmers working in their fields, in places of worship, we had to do away with the shoe. This meant that the footpiece should be suitable for barefoot walking. The moment the outer facade provided by the shoe is peeled away, it becomes essential that the footpiece should cosmetically simulate a natural foot. Also, its delicate material needs to be replaced by a waterproof, durable exterior which can withstand walking on the rugged terrain of our rural landscape. Not only this, most of our countrymen squat and sit crosslegged on floor. Squatting

requires full dorsiflexion at the ankle. During cross-legged sitting, the outer border of the foot is pressed inwards, twisting the foot into inversion and internal rotation. Wearing a Western limb, an amputee cannot work sitting in a cross-legged position because the twist on the footpiece is transmitted to the stump causing unbearable pain.

Additional freedom of movements are therefore necessary in a footpiece to allow our amputees to pursue a normal life style. The footpiece should also possess a degree of suppleness which allows it to adapt to the uneven surfaces on which a villager is required to walk. The Western, chair-sitting amputee never needed these movements and their footpiece, understandably, does not possess these attributes. Similarly, various problems were encountered when scrutinizing the designs of calipers for polio patients.

We therefore formulated a different set of design criteria and tried to work out appropriate theoretical constructs. We approached our formally trained prosthetists to prepare some experimental footpieces incorporting these ideas, but it was evident that their education had never prepared them to think of alternatives and they did not possess the necessary skills or the aptitude required for this work. All they can do, to borrow a phrase from Professor Amulya Reddy, is to reproduce 'blurred xerox copies of Western appliances'.

It was at this stage that the author approached our traditional craftsmen. He had seen their skills and felt that possibly they could help us. They understood the problem and prepared a die, using the traditional sand-casting method. We were thus able to produce, develop and refine a completely different design of a footpiece which looks like a foot. Its interior contains a design, which enables squatting, sitting cross-legged on floor, farming, irrigating fields, working in wet fields, and walking barefoot on uneven ground. Heavy work such as pulling a rickshaw becomes easy. So good is the adaptability that even scaling a vertical rock-face or climbing trees is no problem. You would agree that a design which permits these activities can be considered as an appropriate design. The element of rehabilitation is 'built in' in the design of the limb i.e. a farmer can go back to his village and pursue his original vocation and not migrate to a town to look out for a sedentary occupation.

Break through in footpiece

These traditional craftsmen, learning at their masters' feet, have fantastic skills and a love for working with their hands. And contrary to popular belief they have amazing ingenuity. With simple tools, they are able to produce decorative objects which fill our handicraft emporia. A statue of a village amputee was made without any casting, from handbeaten aluminium sheets by one of our artisans and is almost a piece of art. For persons who can shape metal with such skill, making an aluminium artificial limb is a child's play. So why use expensive polyesters which are now fashionable in modern limbs? We switched on to making metal limbs, which our artisans can make with such speed and dexterity that orthopaedic surgeons from abroad are taken aback when they find a trial limb being fitted in 45 minutes from the time of taking the measurements. It is this simplification which has led to an incredible rise in our work out-put from 60 limbs in 1975, the output is 1500 limbs in 1980. Also, the cost of such appliances is a fraction of orthodox western limbs. A below knee prosthesis costs merely as much as a pair of fancy shoes.

Once this breakthrough was achieved in the case of the prosthetic footpiece, we felt intellectually liberated to examine critically all the designs we have copied from the West. A series of new designs have been developed. As a result of working with our local artisans. I have a tremendous respect for their native skills and self reliance. One often encounters amazing examples of ingenuity of design in peg legs which many of our amputees walk on, and which the village carpenter conceived without any training in prosthetics. A most ingenious, airy, cool and adjustable socket, using strips of bamboo, was designed. Our hot climate makes it a much more acceptable design then the biomechanically superior but unbearably hot modern total contact socket. The concept is beautiful. It is now up to us to refine such attempts. If we adopt a general policy of exhorting these artisans and learn how to communicate our requirements to them, they are perfectly capable of rising to the occasion and produce results with their traditional technology which is appropriate in every sense of the term. Showing an engineering drawing to them is futile. But show them a 3-dimensional model and they can replicate it in no time.

The author has also become increasingly sceptical about the relevance of the formal education we are imparting to our prosthetists and orthotists. Reared in large metropolitan towns, accustomed to good living, and even though capable of talking in English with a lot of technical jargon, they lack skills, dislike soiling their hands with manual work and acquire a value-system wherein they are often scornful towards our patients and mercenary in their outlook. In short, they become whitecollar workers who would never willingly go to work in rural India.

To be able to study the performances of the two groups i.e. the formally educated professionals versus the local artisans, we have, at Jaipur, developed two models of workshops in our own department. One employs the formally educated diploma holders in Rehabilitation Engineering, using high-cost Western technology and the other is run by illiterate but highly skilled local artisans using a low cost appropriate technology. We are convinced that, utilizing appropriate technology, the output of work is more than double with less than half the investments; the quality of products is superior and their patients are much more satisfied. While

I would not like to raise something like the C.P. Snow-Leavis controversy, I think we have here another example of 'Two cultures'. The author would opt for the more convivial culture provided by our traditional craftsmen rather than an alienated group who are becoming increasingly divorced from the mainstream of our rural population.

Hurdles in flow of technology

Following the generation of appropriate technology at the micro-level in one institution, it then becomes essential to consider the problem of technology diffusion at a national micro-level to make the experiment socially meaningful. We have been working at this problem and find that several difficulties save the way :

1. Our own professional colleagues (in this case the orthopaedic surgeons) view with suspicion anything which appears to them to be unorthodox. Unless a technology is imported from the West and is expensive, it does not acquire respectability. That is why, even though field trials in over 5000 amputees and strict laboratory controls convinced us of the superiority of our limb, we had to wait till Western surgeons put their stamp of approval on our work before the local resistance could be overcome to some extent.

2. Each profession zealously guards its own interests and creates a mystique so that its knowledge remains exclusive. A process of demystification is frowned upon and I have been accused of introducing quackery by associating local artisans with, what is considered to be an exclusive professional domain.

3 The author agrees entirely with Iyan Illich that we are confusing schooling with education. These are different attributes. One find the illiterate artisan limb maker analysing a limb in an amputee using the same kind of logic as the author would employ in clinical work and often his analysis is found superior to the authors own. When a car is taken to an illiterate garage mechanic, he is again using the same kind of logic for fault finding. How can we call him uneducated ? We have to rid ourselves of such conceptual mental blocks.

4. In the bureaucratic framework of a Government hospital the artisan can never get justice in the matter of his salary structure. The author has repeatedly seen a skilled craftsman, who was earning over Rs 1000|- a month in the market, being offered by the hospital the meagre salary of a helper just because he is a non-matriculate. In a national programmee, if we have to get our large reservoir of artisans to participate, new criteria for skill measurement shall have to be found out. At Jaipur we could never draw these artisans in our work without outside assistance. This we got from the local community and we worked out an interesting but very viable model of a joint participation of the surgeon, the artisan and a voluntary organization, which not only makes up for the deficiencies of their salary structures but gives us more elbow room for innovations.

Integrating rural artisans

If our profession sheds its prejudices and decides to accept appropriate technology, if we can utilize the enormous reservoir of native talent which is available in every town and village and if we can arrange to pay these artisans on a non-exploitative basis, it then becomes within the realm of possibility to provide rehabilitation aids to the neediest anywhere in the country. Every village in our country has a cobbler, a carpenter and a blacksmith. If this group can make argicultural tools, bullock carts or saddles for horses, why can't they make appliances for the handicapped ? What has a caliper for a polio patient in its design which is beyond the competence of a village artisan ? Of course, as Professor Amulya Reddy emphasizes, appropriate technology does not mean turning one's back on progress. The latest scientific knowledge should go into the development of new innovations. Appropriate technology is not necessarily primitive technology though there is nothing wrong in using traditional tools and materials and utilizing them for a superior biomechanical design. But there is no justification for continuing to lean on the West for ideas, import expensive technology and allow only a handful of formally trained professionals to work in this field.

Using this strategy, one can visualize the emergence of a network of larger workshops at major hospitals employing creative craftsmen where the more complex appliances cannot only be made but new appliances developed; medium sized workshops at District Hospital level where standard simple appliances can be made available at a modest price, and a one-man workshop at a Primary Health Centre level where a locally identified artisan can be provided with models of simple appliances such as splints for disability prevention. He could also perform repair jobs on artificial limbs and calipers. This work could be in addition to his original vocation, enabling him to augment his income. ICMR should seriously consider the idea of helping in the preparation of simple Instruction Manuals and models which could be utilized both by professional medical personnel as well as our local artisans for diffusion of this technology and support research schemes which help the development of the whole range rehabilitation aids which suit our people.

Such a strategy would lead to the satisfaction of basic human needs, generate self-reliance, demystify medical knowledge, encourage social participation and advance developmental objectives. These, after all, are the objectives of appropriate technology.

Thrust of science and technology in Seventh Plan

Yojana Correspondent

DURING THE SEVENTH PLAN the main efforts of science and technology will relate to taking up end-to-end technology missions, establishing linkages between different sectors such as educational institutions, research institutions|agencies|industry, user|beneficiary entities, government planning, decision making etc., developing carefully selected thrust areas; developing areas|centres of excellence: strengthening the science and technology elements in the education sector, ensuring increased productivity and efficiency; enhancing employment opportunities, enlarging the areas of application of science and technology to rural development and for sectors of society such as weaker sections|women; growing the newly emerging areas, existing infrastructure will be consolidated and modernised.

Steps will be taken to integrate science and technology in the State sector. Most of the developmental activity in the country is carried out by the State| Union Territory governments. The existing science and technology capabilities within the State|Union Territory will be fully utilised. Mechanism for analysing the State Plans, defining the science and technology tasks, arranging for their proper implementation, will be set up in the State sector.

Besides, a determined effort will be made to integrate science and technology with other socio--economic sectors and to use it for improving quality of life. However, science and technology will not be treated as an isolated or compartmentalised activity.

State S & T Councils|State Departments of Science & Technology and Environment will be made to play a very important nodal role, in close coordination with the State Planning Departments in ensuring an analysis of State Plans in the various important socio-economic sectors in terms of their S & T component; in working out S & T programmes|activities that derive from them and arranging for coordination of agencies that could implement these programmes; in bringing about involvement of the large scientific expertise that exists with the States|Union Territories in dissemination of information and popularisation of science.

Agriculture

In the area of agriculture the efforts have been reasonably good; and it has been demonstrated that S & T can accelerate the development of agriculture. During the post-Independence period, particularly over the past two decades, highest priority was given to achieving self-sufficiency in food, alternate strategies were examined, and it was agreed that massive application of S & T was essential. It was also realised that trained manpower was crucial for manning science-based agriculture. This called for higher as well as field level education. Hence, a reorganisation of agricultural research and education. A number of agricultural universities, all India coordinated projects etc. were launched in addition to the setting up of a chain of ICAR laboratories. Multi-disciplinary, multi-institutional research was taken up with the thrust on complementing each others resources. In spite of all this, it is realised that there is still a gap between the actual potential and the results in the field; there are problems in the transfer of technology from the Centre to the State Departments.

In the strategies for the Seventh Plan, therefore, it is proposed to set up research centres in each of the agro-climatic zones and to carry out on farm adaptive trials; the approach would be decentralised agriculture planning through NARP centres. Under the National Agricultural Research Project (NARP), centres have been set up which would provide S & T support. Similarly, the Krishi Vigyan Kendras can also be used as Central training centres and integrated with Farmers' Training Institutes.

Jhum cultivation has been an age-old problem ; but solutions are available. Considerable work has been done in North Eastern region in Burnihat.

Significant work on animal development has also recently started. The capabilities arising through work by the Centre will have to be much more utilised by the State Governments by setting up closer linkages.

Irrigation

In the area of irrigation the issues put forth will include :

State would give attention to the setting up running organisations for collection, scrutiny, compilation and analysis of hydrological data, for want of which many projects cannot be cleared. Further, this also would work as an original data base, on which water resources plans would be built up. For this, organisation would be provided by the States by incorporating such proposals in the Science and Technology component in the Plan.

Similar action will have to be taken by the States for ground water resource data collection, compilation and scrutiny analysis. States may have to review cases where ground water organisations need to be strengthened and provide for strengthening them under the S & T programme.

States would consider revamping their system of collection, and compilation of irrigation statistics and statistical information pertaining to water resources development activities so that the data available on the planning base is reliable. This could be provided in the S & T component of State plans

Plan provisions

An appropriate percentage of the total outlay in the respective sectors of development would be specifically provided as an independent item for science and technology, so that there is clear identification of the S & T component for each sector This allocation may be earmarked and Planning Commission may ensure that this earmarked amount is not diverted to any other activity in that sector or to other sector.

The objective of the S & T effort would not merely be looked into from the short term aspect of 7th Plan formulation and objectives thereof It also would provide for infrastructure and capability development for the long term requirement and objectives of all sectors of development activity. It is necessary that we get prepared today for the problems which we may have to face tomorrow or the day after.

Research

As a result of an effort made through the CBIP for the last 20 years, research institutes for applied and basic research relating to river valley development planning are functioning. There is a system of coordinating this research through the auspices of CBIP. Although this system is working satisfactorily, the States would carry out a review of their research organisations and strengthen them to ensure that they are self-reliant and also provide adequate allocation, for performing some basic research in addition to applied research, from State finances. States will have to examine the problem of manning these organisations with personnel of high quality.

CBIP applied research programme would continue to form the activity of the Central sector. However, States would also contribute to this programme by providing necessary allocations through their own sector of activities for carrying out applied and basic research and not depend only upon Government of India's assistance since results of this research will be of direct use to them

There is need to carry out research on all aspects of irrigation management including CAD programme. For this, States would create cells or directorates to look after the problems of research of irrigation management, including that under CAD programme This could be provided under the S&T programme.

Government of India is also thinking of constituting a National Institute of Irrigation Management which will be a multi-disciplinary expert body to coordinate and assist the States in resolving irrigation management problems.

There would be greater interaction between research carried out in the various educational research institutions, as well as State departments. States would take appropriate steps to ensure this so that the technological expertise available in the country is fully and optimally utilised

There is need to create cells or directorates in each of the States to apply remote sensing techniques to the problems of the States so that the necessary capability is progressively built up.

Environmental impact of irrigation, and as a matter of fact of all development projects, needs to be assessed For new projects, this would need to be assessed before the project is taken up. In this direction States would create environmental groups at the State level to examine environmental impacts. Creation of such cells would be provided under the S & T programme.

In respect of over-exploitation of ground water, specific case studies may have to be done by the States where such over-exploitation is taking place. They must also build up the technological capability to carry out these studies which may be provided for in the S & T programme.

The case of States in the North-Eastern region may have to be considered separately, and it would be considered whether research institutes required for

this area can be set up under the aegis of the North Eastern Council.

Manpower development

With the technological explosion that is taking place, it is necessary for States to update technological expertise in their organisations. For this, they would identify persons and training programmes for updating technological capabilities. Central Government is also making efforts to provide such programmes for technology updating. Some of them are likely to be in the nature of training of the trainers

For accelerating S&T development, organisational arrangements at the State level would be looked into. It may be noted that Research Stations and engineering organisations in the States could hardly use about Rs 2 5 crore against the outlay of Rs. 6 crores in the Sixth Plan. The field workers, and those doing research, belong to a common cadre of service; and there is no special provisions for special pay scales The State Governments would consider to review their existing procedures to ensure recruitment of highly qualified persons with post graduate qualifications.

Concerted efforts would be made for the Flood Control Programme especially in the States of Bihar, U.P., Assam and West Bengal. Special S&T inputs would also be required, for evolving cheaper and more suitable anti-erosion measures.

Informatics

For development of S&T, appropriate, adequate and timely information is essential 20 computers have been put in 16 States for data base and management information systems purposes. It is necessary to work out the requirements of S&T information in the States; a number of specifications are available The States would make use of network of bibliographic information i.e. NISSAT

It would be useful if all the States could set up Centres where horizontal transfer of technology can take place.

S&T Councils are enabling nodal mechanisms, by themselves they cannot achieve much; S&T has to be built into the plans of agriculture, irrigation, health, construction and other large socio-economic sectors. S&T Councils can help in arranging for this.

Special activities by State S&T Councils

S&T Councils would establish a dialogue with specialists and experts in natural and social sciences as well as those concerned with programme implementation on what work has to be done and what sort of support would be needed.

One has to bring the problems face to face with the competence that could be used to solve them. For this there is need for new attitudes and aproaches involving inter-actions among scientists, administrators and those concerned with finance. S&T Councils would make an effort to bring about the needed attitudinal changes; and to sustain and nurture these.

One has to recognize the existence of large reservoirs of talents in all sectors, and try to motivate these to ensure fullest utilization.

The importance of extension workers must be recognized in all sectors where large societal impact is involved, e.g. agriculture, health, environment, small scale industry etc.

In the area of research, institutions would undertake surveys, planning social sciences programmes etc.; for this adequate support has to be provided. Research should not mean only sophisticated laboratory experiments in universities, national laboratories etc.

Productivity is extremely important in all sectors. In the Approach to the 7th Plan, special emphasis has been laid on productivity. S&T efforts would be specially directed to enhance productivity in the key sectors of agriculture, irrigation, energy etc.

There is need to focus on awareness building, information availability and dissemination, practical demonstration and extension, and marketing.

Rural development

If S&T is to make an impact in the area of rural development, people's participation, will have to be ensured. It would be useful if senior level scientists could take sabbatical leave and live in villages for a period of say one year to understand the problems and to suggest solutions. The situation on the ground is quite different from that conceived of in the laboratories One often encounters vested interests that resist change. Socio-economic factors and real needs have to be taken note of.

There are organizations at village level and many voluntary agencies which could be effectively and profitably dovetailed into the S&T efforts. Science and technology programmes would not be left just to the scientists alone for planning and implementation. Often, the problems encountered is one of working out the acceptability and feasibility of various options.

Maintenance of handpumps is given as an illustration of a need and a solution related to local manpower trained appropriately. It is necessary to demystify technology; and make it low cost and simple. Dissemination of information is very important.

There are significant resources available in the non-governmental sector. It would be useful to make a list of groups that exist in the various States, from out of which some could be selected on the basis of merit related to past performance, reputation etc.

(Continued on page 42)

How technology helps potters?

The application of technology to the potters' wheel has modernised it with ball-bearings to be run by a fractional horse power motor. This has increased the output of the potters considerably with a corresponding rise in their income. This amalgamation of technology could be seen at Karukurinchi (Tamil Nadu) under the aegis of Potters' Cooperative Cottage Industrial Society.

THERE ARE 15 ENERGISED potters' wheel in operation under the Society. Each wheel is run by a 1|8 h.p. motor. It can be operated at three different speeds. The wheel is housed in a cube of the size 15×15×18 inches. It can be used to shape upto 30 kgs. of clay at one time. Power consumption is just one unit for eight hours operation. The number of pieces produced on the wheel varies from 150 to 60 a day of eight hours, depending upon the size of the pieces. Besides saving tedious human labour, the new wheel increases productivity by 25 per cent. The Society's 15 wheels can give full employment to 30 persons a day. In potters' parlour, it is known as the "Shila Wheel". Each one costs about 2,000.

The Society processes about 30,000 cartloads of clay every year. Pots and pans apart, the artisans of the Society make various other articles such as flower pots, spittoons, earthen stoves etc. also. Clay required by them is mined from the tanks in nearby Karisalpatty and Anapettankadu tanks The entire production is purchased by the Society and almost 95 per cent of it is sold in Kerala In 1983-84, production by members of the Society was to the tune of Rs. 26.6 lakhs

The Society provides common workshed facilities to its 45 members. In all, the Society has nine sheds, being used for various purposes. Management of the Society is vested with seven directors, elected from among its members A new tile making unit under the Society is expected to go into production in 1984-85.

Average earning capacity of a working family of a member-potter, consisting of a husband, wife and a child is around Rs. 800. From this he has to spend for clay, firewood and other raw materials.

Financial aids

The District Rural Development Agency (DRDA) and the local branch of the State Bank of India have come out in a big way to help the potters of Karukurichi. More than 30 members of the Society have been given loans by the State Bank with 33 per cent subsidy by the DRDA under the Integrated Rural Development Programme (IRDP). Potters' children get training in their traditional art through the scheme for "Training of Rural Youth for Self-Employment (TRYSEM). Stipends are available for training, on completion of which institutionalised and subsidised credit is available to the trained to start out on their own. About Rs. 50 lakhs have been distributed to some 4,000 rural artisans of the locality by the State Bank of India.

The total value of village pottery produced in the country during 1983-84 came to about Rs. 51 crores according to official estimates. □

Institutional net work for technology

Here we present a peep into the frame of institutional net work for the development of science and technology in India together with a brief mention of sponsored researches under such institutions. It gives an idea of the dimension, the depth and extensive nature of scientific research and technology development.

THE TECHNOLOGY POLICY STATEMENT announced in January 1983, takes note of the complexity in the generation, acquisition and application of technology. Aims and objectives, reaffirm Indian adherence to the path of self-reliance through strengthening its technology base and its application to areas of priorities; ensuring preservation of our environment and nurturing traditional skills. These objectives can be achieved by proper mix of indigenous technology and acquisition from outside on a planned basis and through further intensifying our mechanism for generating technology, absorption, and diffusion and providing challenging opportunities for our young scientists and technologists.

Committee on S & T

The Government of India constituted in March 1981, a Cabinet Committee on Science and Technology (CCST) headed by the Prime Minister. The Committee reviews the overall progress of the science and technology programmes and takes decisions on high level policy matters, suggestes measures that are needed, major investments, etc. A Science Advisory Committee to the Cabinet (SACC) has also been constituted as apex advisory body on science and technology. It is headed by Member (Science and Technology) in the Planning Commission and includes in its wide spectrum of scientists and technologists representing different areas of scientific endeavour. The Committee is an advisory to the Cabinet and is serviced by DST. The principal tasks of SACC are: tendering advice on the formulation of science and technology policy of Government and the manner of its implementation, identifying and recommending measures to enhance the country's technological self-reliance.

A National Biotechnology Board (NBTB) was set up in 1982 with the main objective of evolving a national coordinated short and long term plan of research and development, utilisation of known technologies, strengthening of existing infrastructure and setting up centres in the newly developed thrust areas of bio-technology. Safety guidelines for conducting recombinant DNA research has been prepared.

The National Science and Technology Entrepreneurship Development Board was also set up in January 1982, with the main objectives of dealing with the problem of unemployment and inappropriate employment among qualified science and technology personnel as also to ensure institutional single window mechanism at the central level for entrepreneurs

desirous of setting up of production ventures, to promote opportunities for gainful self-employment for them and to develop entrepreneurship

Science and Technology Department

The Department of Science and Technology (DST) which was set up in 1971 has been assigned the responsibility of promoting new areas of science and technology; undertaking or financially sponsoring scientific and technological surveys, research, design and development; supporting national research institutions and scientific bodies; coordinating all activities relating to international science and technology collaboration except in specific areas assigned to other agencies; dealing with the promotion of and support to indigenous technology; disseminating scientific and technological information; coordinating multi-institutional inter disciplinary activities in areas of science and technology and providing secretarial support to the Science Advisory Committee to the Cabinet.

The main objectives of National Coordination of Testing and Calibration Facilities is to provide official recognition to competent testing laboratories to carry out particular tests related to science and technology, to the introduction of recognised calibration systems and raising the standard of testing the quality and reliability of Indian goods.

The scheme of Natural Resources Data Management Systems envisages the development of methodologies, formats and computer software for creation of comprehensive data base for micro-level planning. Standard formats for collection of data on natural resources and agro-economic socio-economic and demographic infrastructure have been developed which are under extensive field trials.

Under the National Information System for Science and Technology (NISSAT), activities relating to the dissemination of scientific information have been accelerated. In addition to strengthening the activities of the existing information centres on leather, drugs, machine tools and food, one more information centre for crystallography has been brought under its purview.

A National Council for Science and Technology Communication (NCSTC) comprising representatives from Central and State governments, mass media voluntary agencies, etc., has been set up to prepare blue prints|action plans for popularisation of science and technology and work towards the growth of scientific temper in India.

To encourage scientific activities at the State level, the scheme of providing assistance for development of State Councils for Science and Technology has gained further momentum. Sixteen State Councils for Science and Technology and|or State Departments on Science and Technology have already been formed. Other promotional scheme which have made considerable progress during the years are those relating to technology development for scheduled castes and scheduled tribes, science and technology for women and assistance to professional bodies.

The National Research Development Corporation (NRDC) and Central Electronics Ltd. (CEL), are two public sector undertakings under the control of DST.

The indigenously developed technologies are mostly licensed through NRDC. The Corporation promotes the utilisation of such technologies through equity participation by providing financial support for development projects assisting in horizontal transfer of technology and support for export of indigenous technology. CEL has made advances in photovoltaic systems regularly produced; these are of high standards and have been installed in off shore platforms, communication work, remote mountain villages for water pumping and public lighting places where distributed electric power is not available. A wide range of products in ceramics have been developed. More or less all technologies|products have been developed in the undertaking indigenously.

The Survey of India (SOI), Dehra Dun and the National Atlas Thematic and Mapping Organisation (NATMO), Calcutta are the two attached offices under the control of DST. SOI and NATMO prepare maps of the country needed for survey support to defence forces and other purposes and also prepare a National Atlas of India. SOI has undertaken several field and topographical surveys including surveys for developmental projects connected with coal fields, irrigation, power communication, flood control, water supply, forestry, etc.

A number of autonomous scientific institutions in the country are fully or partially supported by DST through regular annual grants.

The scientific aims and work of these institutions pertain to development of the national science and technology capabilities through accomplishment of time bound research projects of national laboratories. These institutions are: (1) The Birbal Sahni Institute of Lucknow; (2) The Bose Institute, Calcutta; (3) The Indian Association for Cultivation of Science, Calcutta; (4) The Maharashtra Association for the Cultivation of Science, Pune; (5) The Institute of Immunology, New Delhi; (6) Padmaja Naidu Hill Zoological Park, Darjeeling; (7) Raman Research Institute, Bangalore; (8) Sri Chitra Tirunal Institute for Medical Science and Technology, Trivandrum, and (9) Wadia Institute of Himalayan Geology, Dehra Dun.

Atomic energy

The Atomic Energy Commission, set up in 1948, is responsible for formulating the policy for all

atomic energy activities in the country. The Department of Atomic Energy (DAE) set up in 1954, is the executive agency for implementing the atomic energy programme. This Department has a number of units under it.

The Bhabha Atomic Research Centre (BARC) at Trombay, Bombay; started in 1957, is the largest single scientific establishment in the country. At present two exeprimental nuclear reactors are in operation at Trombay—a one megawatt (mw) swimming pool type reactor APSARA and a 40 mw reactor CIRCUS.

The Variable Energy Cyclotron Centre (VECC) set up at Calcutta by MARC is a national facility for carrying out advanced experimental research in nuclear sciences. The High Altitude Research Laboratory of BARC at Gulmarg which provides facilities for high altitude research to all scientific institutions and universities in India. BARC has a Nuclear Research Laboratory at Srinagar as well.

The seismic station of BARC at Gauribidanur near Bangalore makes it possible to detect and determine the location of occurrence of underground nuclear explosions.

The Reactor Research Centre (RRC) at Kalpakkam near Madras is primary for carrying out the research and development work needed to develop fast reactor technology. A 15 mwe (maga Watt electrical) Fast Breeder Test Reactor (FBTR) is under construction at RRC

The Power Project Engineering Division (PPED) of DAE is responsible for the construction and operation of nuclear power stations. PPED is operating two nuclear power stations, namely 2×210 mwe Tarapur Atomic Power Station at Tarapur nearly 100 km north of Bombay and the 2X220 mwe Rajasthan Atomic Power Station at Rana Pratap Sagar near Kota. Construction of the 2×235 mwe Madras Atomic Power Project at Kalpakkam near Madras is more or less completed. The reactor of unit-1 of the Madras Atomic Power Station attained criticality on 2 July 1983 Another 2×235 mwe nuclear power station is at a fairly advanced stage of construction at Narora in the western part of Uttar Pradesh. Construction of the fifth nuclear power station consisting of 2×235 mwe units at Kakrapar has been recently started

The Atomic Minerals Division (AMD) is one of the first units started by the ACE. AMD with its headquarters at Hyderabad is responsible for prospecting and development work relating to uranium, thorium, beryllium, niobium and tantalum. The Indian Rare Earths Ltd. (IRE), a Central Government company under the DAE, operates the mineral sands industry in Manavalakurichi and Chavara and the rare earths plant at Alwaye It also produces thorium products at Bombay. IRE is setting up the Orissa Sands Complex (OSCOM) for enhancing rare earths production. The Uranium Corporation of India Ltd (UCIL), another public sector undertaking under DAE, mines and processes uranium ore at Jaduguda in Bihar. The Nuclear Fuel Complex (NFC) at Hyderabad fabricates nuclear fuel for the power reactors and also produces zirconium alloy products and stainless steel tubes NFC also produces certain special materials needed for electronics industry. The Electronics Corporation of India Ltd. (ECIL), the public sector undertaking set up by DAE at Hyderabad in order to exploit the expertise developed in BARC, manufactures electronics instruments and equipment for nucloar as well as non-nuclear uses ECIL also makes consumer electronics goods such as TV sets, calculating machines and computers.

Another area in which India has developed expertise is the technology of underground nuclear explosions.

A third research centre is planned at Indore primarily to develop advanced technologies such as fusion, laser and accelerator applications.

Space research

The Indian space programme began in 1962 when the Indian National Committee for Space Research was formed in the Department of Atomic Energy of the Government of India. In 1969, the Indian Space Research Organisation (ISRO) was created to plan manage and execute the nation's growing activities in space science, space technology and space applications.

Government established the Space Commission in June 1972 backed by the Department of Space (DOS) and entrusted DOS with the responsibility for concluding India's space programme. ISRO functions under DOS as its research and development organisation The Space Commission, the Department of Space and the Indian Space Research Organisation have their headquarters in Bangalore

The primary aims of the Indian space programme are the applications of space science and technology to further national developmental objectives in mass communication and education via satellite, the survey and management of natural resources through remote sensing technology from space platforms and the development of space technology with the maximum degree of self-reliance

The Indian Space Research Organisation (ISRO is responsible for the planning, execution and management of space research activities and space applications programmes of the DOS. The activities of ISRO are carried out at its four space centres namely Vikram Sarabhai Space Centre (VSSC), Trivandrum

ISRO Satellite Centre (ISAC) and the Auxiliary Propulsion System Unit (APSU), Bangalore; SHAR Centre, Sriharikota, Andhra Pradesh; and Space Applications Centre (SAC), Ahmedabad.

The Physical Research Laboratory (PRL) in Ahmedabad, an institution supported mainly by the DOS, conducts research programmes in space and related sciences. The National Remote Sensing Agency (NRSA) at Secunderabad utilises modern remote sensing techniques supporting the planning and management of the country's natural resources and provides operational support to various users.

The SHAR Centre at Sriharikota Island in Andhra Pradesh, is being developed as a range for launching bigger satellite launch vehicles like ASLV and PSLV. India's first satellite launch vehicle, SLV-3 was launched from the Centre.

A comprehensive test facility for conducting various ground tests of rocket motors and sub-systems has been set up at Sriharikota. This test facility is being augmented for the PSLV programme.

Space Applications Centre (SAC), Ahmedabad is engaged in the planning and execution of the space application projects of ISRO. Its objective is to apply space science and technology to practical uses. To achieve this goal, SAC has taken up work in telecommunications and television broadcasting and reception via satellites; use of remote sensing techniques to survey natural and renewable earth resources; studies in space meteorology and satellite geodesy.

Sponsored research

Various universities and academic institutions in the country are identified and encouraged by ISRO to undertake research and development studies in space science, space technology and space applications relevant to the Indian Space Programme

The Indian Middle Atmosphere Programme (IMAP) is a nationwide cooperative enterprise in scientific research to investigate the physical and chemical phenomena and processes taking place in the atmosphere between 10-100 km.

The Department of Space, in close cooperation with the Ministries of Communications, Tourism and Civil Aviation and Information and Broadcasting, has taken up the establishment of the Indian National Satellite (INSAT) system. The INSAT-1 system is an operational space system providing telecommunications, meteorology and television services from identical multipurpose satellites in geostationary orbit. The proposed system envisages a very significant telecommunications component providing for long distance telephony, communication with remote areas and islands and emergency communications. The meteorological capability includes 24-hour observation of weather system, data collection and relay from remote, unattended platforms and disaster warning. Television capability relates both to direct TV broadcasting from satellite to community TV sets in rural areas and to radio networking.

The Physical Research Laboratory (PRL), Ahmedabad conducts basic research in space sciences for undertaking the structure and dynamics research in space sciences for understanding the structure and dynamics of the earth's upper atmosphere, the solar-terrestrial relationship, astrophysical problems, etc.

The National Remote Sensing Agency (NRSA) carries out surveys of various natural resources, using remote sensing techniques. Satellite imagery, multi-spectral scanner data from aerial flying and aerial photography are made use of for such surveys The laboratory premises of NRSA are located at Hyderabad and the research flight facility with four aircraft (for high, medium and low altitude flying), fitted with various sensors, is located at Bangalore. □

(Continued from page 37)

The Council for Advancement of Rural Technology (CART) has enumerated priority areas in consonance with the Technology Policy Statement of the Government of India.

Social importance would be given to porgrammes relating to rural women and youth. State Governments would identify specific areas of technology appropriate to rural areas in each State, and interact closely with CART

Apart from demonstration and training, steps would be taken simultaneously to disseminate knowledge about acceptable rural technologies to manufacturers of machinery, tools, equipment and spare parts, so that large scale production of technically improved machinery could be carried out in the private, cooperative and public sectors; for this, close coordination between State departments dealing with Rural Development, Science & Technology and Industries and CART would have to be ensured.

There has to be a close working relationship between the DRDAs and DICs. A district level committee on Science & Technology could be set up The instance of the Rural Technology Institute Gujarat, which had set up 10 technology centres in 10 districts and proposed to have a technology centre in each district in the State is cited in this connection. This institutional arrangement may be adopted by other State Governments, and this could be formulated as a regular plan scheme in the Seventh Plan with some quantum of Central assistance

The importance of public participation in the dissemination and adoption of technological innovations for rural development will be emphasized. □

How can technology help villages ?

"TODAY villages need and demand the discoveries of science. It is of the utmost urgency that technology should reach the villages.

"Electricity makes it possible to shorten the distance between town and village. Power enables farming to move to a higher level of technology and become a remunerative industry. It can also mother a wide range of small industries based on agricultural produce, on the manufacture and upkeep of small tools."



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Where do the riches go ?

"IT is a strange thing that in spite of more and more wealth being produced, the poor have remained poor. They have made some little progress in certain countries, but it is very little compared to the new wealth produced. We can easily see, however, to whom this wealth largely goes. It goes to those who, usually being the managers or organisers, see to it that they get the lion's share of everything good. And, stranger still, classes have grown up in society of people who do not even pretend to do any work, and yet who take this lion's share of the work of others ! And,—would you believe it ?—these classes are honoured; and some foolish people imagine that it is degrading to have to work for one's living ? Such is the topsy-turvy condition of our world. Is it surprising that the peasant in his field and the worker in his factory are poor. although they produce the food and wealth of the world ? We talk of freedom for our country, but what will any freedom be worth unless it puts an end to this topsy-turvydom, and gives to the man who does the work the fruits of his toil ? Big, fat books have been written on politics and the art of government, on economics and how the nation's wealth should be distributed. Learned professors lecture on these subjects. But, while people talk and discuss, those who work suffer. Two hundred years ago a famous Frenchman, Voltaire, said of politicians and the like that 'they have discovered in their fine politics the art of causing those to die of hunger who, cultivating the earth, give the means of life to others'. "

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Tasks before the fourth pay commission

NEXT ISSUE

How economy performed under Mrs. Gandhi

Soil conservation in 18 lakh hectares

SOIL CONSERVATION MEASURES through watershed management will be taken up in 18 lakh hectares area in the catchments of river valley projects as also flood-prone rivers during the Seventh Plan period at an estimated cost of Rs. 648 crore. While 10 lakh hectares will be in the catchments of river valley projects, 8 lakh hectares represent the catchments of flood-prone rivers.

The scheme of soil conservation in the catchments of river valley projects has been in operation since the Third Five-Year Plan and presently work is in progress in 724 priority watersheds in 28 catchments spread over 17 States, one Union Territory and the Damodar Valley area. By the end of the current financial year, work is likely to be completed in 178 watersheds. Again, 14 watersheds have been transferred in the scheme of integrated watershed management in the catchments of flood-prone rivers. Thus, work on 532 watersheds will be on-going in the Seventh Plan.

This programme is being implemented with 100 per cent Central assistance—50 per cent as grant and 50 per cent as loan advanced to the respective State Governments. Till 1983-84, an area of 18.37 lakh hectares had been treated at a cost of Rs. 160 crore. This year an area of 1.04 lakh hectares will be treated at an estimated expenditure of Rs. 19.9 crore.

The Centrally sponsored scheme of Integrated Watershed Management in the catchments of flood-prone rivers of the Gangetic basin was launched during the Sixth Plan, on the recommendation of the Working Group on Integrated Action Plan for Flood Plains in the Indo-Gangetic Basin appointed by the Union Ministry of Agriculture, in 8 catchments lying in the States of Uttar Pradesh, West Bengal, Himachal Pradesh, Haryana, Rajasthan, Bihar, Madhya Pradesh besides the Union Territory of Delhi. Through this scheme, 1003 lakh hectares of land had been treated by the end of 1983-84 at a cost of Rs. 18.13 crore. During the current year, it is expected that 55,000 hectares of land would be treated at an estimated expenditure of Rs. 12 crore. □

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Employment programmes need proper direction

Madhukar Gupta

Stating that there is no discernible pattern or direction in the asset creation process of various employment and public works programmes, the author says one cannot help concluding that there is a high degree of ad-hocism, and in some cases a nagging persistence of the "test works" spirit. He suggests a policy perspective for making programmes viable if poverty is to be eliminated, and makes a strong case for merger of the National Rural Employment Programme and Rural Landless Employment Guarantee Programme in the Seventh Plan and beyond.

A SUBSTANTIAL REDUCTION in poverty and unemployment|underemployment has been stated goal of successive Plans. The Sixth Plan aims to bring down the population below the poverty line, from 51 per cent in 1979-80 to 30 per cent by 1984-85 and to less than 10 per cent within the 15 years perspective ending 1994-95. Apart from normal sectoral plans, several special programmes were started in the Sixth Plan to achieve this objective. The most significant of these were the Integrated Rural Development Programme (IRDP) which aims at the endowment of productive assets to identified households from the poverty group, and National Rural Employment Programme (NREP), which aims to create additional wage employment opportunities for the rural poor through public works aimed at creating durable assets in the rural areas. Midway through the plan, it was felt that the hard-core or rural poverty comprising the rural landless had to be approached more directly, particularly in terms of creation of additional opportunities of gainful employment. This led to the launching of the Rural Landless Employment Guarantee Programme (RLEGP) aimed at providing 100 days employment in a year to atleast one member of each landless rural household. I would be dealing in this paper with the programmes aimed at creating employment through public works, which were started in Sixth Plan.

Review of past experience

Before we look into the performance of these employment programmes, a look at the historical perspective and past experience is essential.

There was a fairy early realisation of the fact that actual results did not validate the assumption that growth will lead to substantial absorption of growing labour force. Various special schemes of employment generation were, therefore, taken up from time to time.

The Rural Manpower Programme (RMP) was taken up towards the end of 1960-61 and covered 1000 Community Development Blocks by the end of 1964-65. This was aimed to provide employment for 100 days to at least 2.5 million persons by the last year of the Third Plan. However, due to resource constraints, only a little over 20 per cent of the outlay of Rs. 150 crores, originally envisaged, could be provided and the programme came to end in 1968-69.

This was followed by the Crash Scheme for Rural Employment (CSRE) which was launched in 1971 for a period of 3 years, with an annual outlay of Rs. 50 crores. This Programme aimed to create employment

opportunities for 1000 persons per annum in each of the then existing 350 districts in the country. Although, in the matter of mandays of employment generated the targets were exceeded (actual employment generation was 3158.92 lakhs mandays as against a requirement of 3150 lakh mandays even @ 300 days per person each year), but in fact the benefits both in terms of direct employment and asset creation were found to be too widely scattered, with considerable lack of planning and durability in the case of the latter.

In view of this experience, it was felt that a more concerted effort was needed to ensure that such schemes could have a discernible impact on the unemployment situation in the country. Alongwith the CSRE, a Pilot Intensive Rural Employment Programme (PIREP) was, therefore, started in November 1972, for a 3-year period, in 15 selected CD blocks. The objectives of this were : the provision of additional employment opportunities for unskilled labour, creation of assets, preferably those, which would have a multiplier effect on creation of new job opportunities of a continuing nature; creation of new skills through project work on site; and, more importantly, to attempt some kind of manpower budgeting with respect to wage-seeking labour with a view to ultimately evolving a comprehensive programme for the rest of the country. A committee, set up in October, 1974, to review its implementation, expressed the view that the entire development strategy should be based on labour intensive technologies, as an integral part of the regular development process, leaving a small backlog of unemployment to be tackled through special employment projects.

Three years later, in the backdrop of comfortable food stocks of 15.4 million tonnes, the "Food For Work Programme" (FFWP) was taken up from April 1, 1977 with the three fold objective of utilisation of available surplus foodgrains for human resources development, generation of additional gainful employment in the rural areas to improve their income and nutritional level and, strengthening of rural infrastructure. The last of these came about as a modification of the initial aim of using the food resources for maintenance of public works, on which large investments had been made in the past, and finally included all items of works, Plan and non-Plan, provided they were in the nature of durable community assets.

A total employment of 9793.22 lakh mandays was generated under this Programme in the three years from 1977-78 to 1979-80, and a wide variety of assets were created. During 1979-80 when the country was faced with a severe drought, this programme became very popular and came to be recognised as a major instrument of rural employment and development. An evaluation of the Programme by the Programme Evaluation Organisation of the Planning Commission (PEO), however, brought out some major weaknesses which eventually led to a restructuring of the programme in the form of the National Rural Employment Programme (NREP) which was launched on October 2, 1980, and became a regular Plan Programme from April 1981. In addition some States like Maharashtra, Kerala, Gujarat and Tripura have their own Programmes the most notable of which is the Employment Guarantee Scheme (EGS) in Maharashtra.

Some important issues that emerge from the experience of the past programme are examined below

1. Experience under all the past programmes suggests that the benefits, were very thinly spread and the impact in terms of overall unemployment/underemployment was not substantial. The average period of employment per family in the case of the FFWP was found to be only 44 days in an evaluation study of the PEO (1980). This becomes more relevant if read with the findings of an evaluation study in respect of the Employment Guarantee Scheme (EGS) of Maharashtra that in many instances there was participation of as many as 3-4 members from single families thus bringing down the per capita employment period even further. It would not be unreasonable to assume a similar trend in other similar programmes.

2. The evaluation study of the EGS Maharashtra has also brought out that there was a higher participation of the non-target group than the target group. Landless labourers accounted for only 22 per cent of the beneficiaries as against 78 per cent for cultivators from the target and non-target groups. The major reason for this appears to arise from the difference in the nature of employment requirement of the two categories viz. longer periods in the case of the former and seasonal in the case of the latter. The seasonal nature of works under EGS, uncertainty in respect of duration of the works, and delays in payment appear to have worked against higher participation of landless labourers. At the same time it was found that, for those landless persons who get employment under the scheme, it was of great significance to their needs. The important point is that even in terms of direct employment effects the redistributive element of the programmes has been limited.

Although each successive programme generally aimed at the creation of community assets, this was mostly found to have been done in an unplanned and haphazard manner. A concrete example is that of rural roads : 72,375 kms., under CSRE; 2,03,084 kms under FFWP; and 3,91,297 under NREP (till 1983-84) i.e. total of over 6 lakhs kilometres of roads have been constructed under special employment programme in just over a decade. By the financial criteria of an average of 2.5 kms. of road length per village adopted by the Task Force on Projections of Minimum Needs & Effective Consumption Demand, set up by the Planning Commission (1979), the achievements under CSRE and FFWP alone should have led to connecting about 1.1 lakh villages in the country. In absolute terms only 2.45 lakh villages actually had road connections of any kind till 1980. Obviously, the impact of the Special Employment Programmes had been only

peripheral. In this context, it is relevant to note the observations of the Public Accounts Committee that more than 50 per cent of the assets created under the FFWP were not durable and there was no information available as to the value of such assets and the expenditure requirements to make them durable.

In the PIREP which was meant to evolve an employment strategy for replication, the need for taking up projects having a multiplier effect for creation of new job opportunities was stressed. In the absence of studies indicating output-employment effects of special employment works, it is difficult to say anything definite about the actual position on this score, but experience so far appears to suggest that this aspect has not received adequate attention.

The most important lesson that comes out from past experience is that but for the RMP (1960—1969) and the NREP all other programmes tended to function on an ad hoc basis, and even the RMP, because of resource constraints, was reduced to a similar position. Not surprisingly, therefore, clarity of objectives and strategic content were generally missing. In this context the observations of the Committee that reviewed the PIREP that the whole strategy should be based on creative labour absorption through production activities based on labour intensive technology, leaving only a small backlog to be tackled through by special employment schemes, becomes particularly relevant. This highlights the sustenance nature of such schemes as distinguished from the provision of self sustaining income generating capacity such as that which could be gained from the endowment of productive assets. As a corollary to this, it also means that in perspective special employment programmes should be conceived with the aim of being tapered off at some targetted point of time. Such target dates would naturally relate to the perspective as conceived in asset endowment and basic need programmes, coupled with overall growth projections.

Need for special employment programmes

With vast numbers of people suffering from unemployment and, more than that, from gross under-employment, the need for special employment programmes as a measure of providing supplemental income is obvious in the present condition of the rural economy. But, lessons from past experience would tend to support the proposition that as a part of long term strategy, such programmes should be aimed at a particular strata of people or sub-group within the larger poverty group. This strata would, by and large, consist of the poorest amongst the poor i.e. those who are totally assetless with low labour mobility, who, even if provided with productive assets, would take both time and supplemental assistance to reach a level of self sustenance through productive use of the assets. This should be the core target group for the Programme.

The only way such a target approach can be meaningfully operationalised is by bringing in the concept of Guarantee related to a fixed period of employment ranging from 90—120 days a year for atleast one person from each target household, which will now have to be seriously considered in the Seventh Plan. If necessitated by resource constraints, the seasonal employment requirements of small cultivators would have to be met from normal ongoing works, and by increasing the productivity and labour intensity of their land holdings with or without supplementary asset endowment. We will see later that even this can be done to some extent, through the special employment programmes. For purposes of strategic planning, it is clear that special employment programmes should be closely integrated with and, in fact, should be viewed as part of a total anti-poverty package having definite and distinct approaches towards different classes of the poor. Considering the dimensions of poverty, a necessary concommitant of this would also be that such programmes, with the required directional emphasis as stated above, would, perhaps, have to be an integral part of the Plan for atleast the coming two-three decades or so. This must be clearly recognised at the outset to enable long range planning for asset creation, creating the necessary organisational structures, and avoid taking up ad hoc employment schemes separately in different areas.

This has to an extent been achieved by bringing the NREP squarely into the Plan and is thus re-inforced by the professed intention of continuing it in the Seventh Plan.

Review of the national rural employment programme (NREP)

The progress of NREP in terms of provision and utilisation of funds and employment generated so far is given in table below:

	(Rs. in crores)		(in million mandays)	
Year	Releases during the year	Total available resources (including carry over balances)	Utilisation	Employment Generated
1980-81 . .	316 38	346 32	217.53	413.58
1981-82 .	333 08	461.87	319 48	354 57
1982-83 . .	399 23	541.63	378.20	350.10
1983-84 . .	400.00	513.49	390 06	302.02
1984-85 . .	460 00*	..		

*Allocation for 1984-85.

Employment generation

For reasons stemning largely from the continuous increase in wage levels and rising material costs, the employment in absolute terms has continued to come down. However, the targets set for the creation of additional employment opportunities have been consistently achieved. It is, however, significant that data regarding the number and category of persons, and|or households to whom employment was provided is not available. Hence, the overall impact of the programme

cannot be spelt out. This is a major data gap, which will now have to be filled through the target group approach as indicated earlier coupled with appropriate identification and monitoring mechanisms.

Nutritional and living standard of the poor :

The objectives pertaining to improvement in nutrition and living standard of the poor are sought to be achieved, through part payment of wages in the form of foodgrains, and of course, by increasing the purchasing power of the workers through supplementary income resulting from direct employment.

(a) The performance in respect of distribution of foodgrains has not been very satisfactory. Against a stipulation of giving atleast 1 kg. of foodgrains per day the average achieved in 1983-84 was only 0.49 kg., with only two States and one Union Territory *viz.* Orissa, Tripura and Lakshadweep having achieved the desired level. During 1983-84 a significant step was taken by providing substantial subsidies on the issue price of foodgrains to be distributed under the Programme. Apart from increasing the total money value of the wages to the extent of the subsidy, this step created a direction towards the poverty group and an element of redistribution in the Public Distribution System, which under the main system had consistently eluded operationalisation also. Unfortunately, even the provision of subsidy has not led to any improvement in the level of foodgrain distribution under the Programme. But for a few cases where lower market prices (in season) may be responsible for this, the major bottleneck appears to lie in administrative weaknesses. It is essential that this issue is faced squarely and a time bound action programme is made by each State Government to be able to come up fully to the stipulated level.

(b) Some States, such as Tripura, have also been distributing other items such as Saris in their own special employment programmes. In view of the fact that clothing forms a basic requirement and, so far figures only marginally in the Public Distribution System, it may be worthwhile to incorporate this in the NREP. For supplies of the clothing items, a tie-up with the handloom sector could be made, which would benefit the poorer people in that sector also by providing them with a ready market.

(c) As regards supplementing the income of the workers through direct employment, it is not possible to comment on the actual position obtaining in this regard because no account is available of the quantum of employment provided to different workers, since monitoring so far comprehends employment generation in gross manday terms only. It is important here to note that the goals of the programme as a part of the beneficiary oriented anti-poverty package would be achieved only if a reasonable period of employment is ensured for each worker. As already mentioned, at present there is a vital data gap in this respect.

(d) Another important aspect of the programme in terms of its employment|income generating effects relates to stabilisation of wages, which is sought to be ensured through payment of minimum wages under the Programme. After an almost disastrous start in this regard the position has improved substantially by 1983-84 in almost all States. However, considering that the wage element also includes skilled wages, which would, particularly in building works, constitute a substantial part of the total wage cost, the position of actual level of unskilled wages is still not clear. The reported figures of total wage costs which in a number of States approximate to the minimum wage level in *manday terms, would therefore, indicate that the actual* unskilled wages are still below the prevalent minimum wage levels in almost all the States. In this backgdound it would be worthwhile to review the entire question of whether skilled wages should be deemed to be a part of the wage component or of the material component. The important point in this regard would be that the Programme aims to provide employment opportunities to the poor, and presumably unskilled workers. In any case a disaggregated account of skilled and unskilled wages paid, could be usefully kept.

Asset creation

The following table shows the yearwise picture of asset created under the Programme :

	1980-81	1981-82	1982-83	1983-84
Social Forestry .	54567	103319	100984	94268
Soil Conservation (ha)	228130	136971	37823	74586
Works benefiting Sc's Sts (Nos) .		90423	158970	80344
School & Others Buildings (Nos)	16001	21302	75402	21530
Tanks .	NR	13709	15997	11628
Roads (Kms)	166463	73010	104448	48293
Irrigation & Flood control (ha)	385144	105641	166408	307111
Others .	141539	7276	15683	12113

It would be seen that till 1982-83 works such a social forestry, soil conservation, and minor irrigatio had a progressively decreasing coverage, while ther was a sharp increase in building and road works. Pa of the reason for this appears to lie in the fact tha *for the first six months of 1980-81*, the Food fo Work Programme was still in operation, which had n provision for expenditure on materials, and per forc the emphasis was on labour intensive|earth-work typ of projects. With the launching of the NREP, and th accompanying emphasis on the need to ensure durab lity of the assets created, a provision allowing fc expenditure on materials was made with a stipulate wage : material costs ratio of 40 : 60 (revised t 50 : 50 in 1983-84). In this background the tren would appear to be a welcome one, as it indicates move towards building up durable assets and movi away from the "test relief works" spirit which albi a hangover from the Famine Code of Yesteryear appears to have dominated the Special Public Worl scene over the last two decades. The sharp decline, quantum terms, in almost each category of asse (particularly material intensive assets) created und

the Programme in 1983-84 in spite of a higher total investment would seem to re-inforce the proposition. However, in the absence of classified categorywise expenditure figures for different assets, it is difficult to say anything conclusively on the subject. Reviews made by the Ministry of Rural Development and a closer analysis of some of the figures b.ing out the following pertinent issues :

(a) Although the national average of wage-material cost in 1983-84 was about 62 : 38 (*i.e.* very near the pre 1983-84 stipulated level of 60 : 40), in disaggregated terms the variance in different States has ranged from 42 to 87 per cent in the case of wage costs and from 13 to 50 per cent in the case of material costs. In a number of States there is still a predominant labour cost element, even though the type of works taken up could be called material intensive.

(b) The following chart shows the position of total expenditure and actual asset creation in some selected States in 1983-84 :

Category of Asset	Andhra Pradesh	Maharashtra	Tamil-Nadu	U.P	West Bengal
1. Total Expenditure	3718 66	2903 77	4008 16	6895.90	2544.05
2 Social Forestry : (a) Areas (ha)	6358	2474	11189	13016	2992
(b) Trees planted (lakhs)	620 09	43 78	72 49	411 84	36.26
3. Works benefiting SC/ST (Nos)	46038	6	2029	98	3263
4. Tanks (Nos)	102	15	2322	84	2912
5. M. I. & Flood Protection Unit (Ha)	4676	1	2946	473	9157
6. Soil Conservation (Ha)	55		14	7763	60385
7. Drinking Water Wells (Nos)	299	94	1777	37	17923
8. Rural Roads (Kms)	3877	372	9157	2421	16757
9. School Bldgs Panchayat Ghars	4440	425	3278	79	4273
10. Other Works (Nos)	844	268	2478	365	3367

While it may be said that cost norms would vary for different activities in different States, the extremely wide variance in the investment-output relationship in different States cannot be explained only by this—in West Bengal a substantially larger number of assets have been created in almost every category as compared to Uttar Pradesh with a comparative investment level of only 37 per cent.

(c) Asset creation also does not appear to have been linked to any well defined priorities either in terms of the Minimum Needs Programme or the productive requirements of agriculture and allied activities The following table gives data regarding a few selected States (the selected States have 40 per cent of the total villages in the country) in respect of roads (roads have been chosen because, apart from being a vital component of rural infrastructure and of the Minimum Needs Programme, they have had a predominant place within the NREP also).

Table

	Bihar	Orissa	U P.
1. Road Kilometerage constructed/improved under NREP (1980-84) (in Kms)	14917	46980	75092
2. No. of villages			
(a) as per MNP criteria*	15414	7380	22285
(b) Others	52152	47266	90266
(c) Total	67566	54646	112551
3 No. of villages connected with roads as on 1-4-80 :			
(a)	7220	512	8583
(b)	10814	.	NA
(c)	18034	.	..
4 Target for Sixth Plan under MNP	2571	2780	4057
5 Likely achievement	2485 (—136)	1130 (—1650)	2477 (—1580)

It would be seen that in all these States a substantial numbers of villages (even as per the limited MNP criterion—villages having a population of 1000 and above) remain to be connected and there are likely to be shortfalls in terms of Sixth Plan targets. These would be substantial in the case of U.P. and Orissa. On the other hand, almost 75000 and 47000 kms. of roads are reported to have been constructed under the NREP alone in the two States. By the criteria of road length per village referred to earlier, this could have meant road connections for 3000 and 18800 villages respectively, which has either not happened or has not been taken note of. This appears to have been caused partly due to the fact that roads under the Programme seem to include all kinds of works like paving of village streets, inter-basti road within villages and link roads as per MNP norms. In the totality, however, the lack of prioritisation and planning is evident. In such a situation it cannot also be guaranteed that all works would be durable. Moreover the long-term and even direct employment implications of small isolated works would at best be limited.

Social forestry

Reviews show a similar situation in respect of social forestry. In addition to road side plantations, which have been popular every-where, the works in some States were found to include the growing of nurseries for distribution of saplings to all farmers, big and small, and in others, small village lots, etc., without any adherence to cost and physical norms. Apart from an attempt to substitute funds, this indicates a situation in which there may not be much potential for long term income or employment effects, particularly for the target group, apart from the fact that in the process the concept of social forestry itself has tended to get relegated to a level of marginal relevance.

The growing propensity to take up all kinds of building works shows the need for having work-sites

near the villages; local pulls and pressures for a wider coverage of villages and panchayats (these two can be said to reflect the economies and the politics of the programme); and, the preference of local Planners arising from easier implementability of such works than, for example, of water-shed based land development works. In the process, however, material costs are high with higher subsequent maintenance requirements, durability of the assets is suspect, and both the direct and long-term employment effects are extremely limited.

All in all, the above review would show that there is no discernible pattern or even direction in the asset creation process, and one cannot help concluding that there is a high decree of ahocism, and in some cases a nagging persistence of the "test works" spirit.

Directions for the future

The question would then arise; how and what direction can and should be given to the Programme? In a sense, the problem can be said to lie in the multiple objectives and sub-objectives of the Programme themselves.

(a) Undeniably, the first and the major objective is to create additional employment opportunities. On the face of it, this would naturally point to labour intensity being given a pride of place in the project selection process. An important aspect of this, however, should be the long-term and sustained employment potential of the projects. It would bear repetition that immediate|direct employment is essentially in the nature of relief and the permanent value of the Programme would lie in strengthening the employment potential of the economy as a whole. This would point to the need to take up works of a productive nature.

(b) Productive Programmes with long-term income generating potential, would by their very nature relate to the development and increasing the productive capacity of existing assets e.g. land development, minor irrigation and even roads which help to market the local produce. Considering the skewed pattern of asset holding in the rural areas, such projects would tend to favour those who are already better off. On the other hand, increased agriculture productivity and intensity would lead to greater labour absorption. We are thus faced with another apparent conflict.

(c) The objective which seeks to create durable community assets, would automatically point towards a higher component of durable road works, building works etc., which would have a predominantly social value. In a number of cases in this category of works, the higher material and skilled labour requirements, would substantially erode the direct employment generation potential of the outlays in terms of mandays per annum. In the case of buildings, apart from the very low direct unskilled labour requirement, the long-term income and employment effects would be at best very marginal

(d) The provision for using upto 10 per cent of the allocations on works of direct and even individual benefit to members of the Scheduled Castes, could easily be in the nature of assets endowed (e.g. house-sites and constructed houses), but their direct employment potential for the community as such would be very limited. The same would be the situation where land development works on private lands is undertaken, unless by some legislation, etc., large chunks of such lands can be compulsorily taken up for development at the instance of Government for land development, soil conservation etc. with provision for payments of costs by the landholders, at least the larger ones.

It would be seen that a number of parallel and often conflicting issues are involved in different project typologies.

Careful thought would have to be given, in this background, to define the immediate and strategic objectives of the Programme with greater clarity, and to devise a programme content aimed to achieve these objectives. It appears that in concretising the objectives and defining and prioritising the kind of projects that ought to be taken up, the following factors would have to be given due emphasis : (a) labour intensity and amenability of the projects to provide a reasonably long spell of employment in the process of implementation; (b) direction towards the poor; (c) productivity and long-term income and employment generation potential; (d) creation of a base for asset endowment programmes aimed at the poor; (e) capacity to fill up gaps in vital infrastructure components in the rural areas; (f) potential for generation of income for the community, wherever possible; and (g) making the rich pay for benefits accruing to them through such programmes.

Suggested programme objectives

If we are willing to go along with the foregoing review and analysis, the objectives of the NREP or any other Special Public Works Programmes could be redefined as follows :

(i) generation of additional employment opportunities so as to provide 90—120 days employment every year to at least one member from each rural landless household*;

(ii) creation of durable productive assets aimed to provide direct benefit to members of the poverty group comprising Scheduled Castes| Scheduled Tribes, rural landless agriculture labour, households and small and marginal farmers; creation of economic rural infrastructure; and augmenting local resources through selected community assets;

(iii) improvement of nutritional status and levels of living of the poor through increased supplementary income and provision of foodgrains and other essential commodities to the beneficiaries; and

(iv) stabilisation of wages in the rural areas

* Quantified objectives for average block-wise total employment generation could be attempted on the basis of rough demographic estimations.

Some subsidiary objectives would also need mention in the guidelines. Prima-facie, these could include skill formation, reliance on use of local materials and resources, promotion of labour intensive technologies, income redistribution in favour of the rural poor, stimulation of local popular participation and organisation of the rural poor through cooperatives and other organisations and associations.

Suggested programme content

Some possibilities and priorities for the type of works that should be taken up under the programme in the background of the foregoing review and suggested objectives are given below :

1. Wherever there is cultivatable waste land and other kinds of marginal lands, it should be taken up for development and in the process employment should also be provided to actual or potential allottees|beneficiaries of such lands Scattered small and marginal holdings could also be consolidated and so developed. In all such cases no financial liability would be created for the beneficiaries.

2. Publicly owned derilict tanks could be renovated on a large scale and turned over to target group workers for pisciculture on a cooperative basis

3. Social forestry works should be taken up in the form of fuel wood lots energy plantations and common pastures or fodder plantations. These could be leased out to poor beneficiary groups who may be landless and help to save fuel costs in the houshold and sustain animal assets. For roadside platations also, arrangements for caring and maintenance in manageable stretches on the basis of wage payment coupled with hutment facilities and the right to collect the produce could be conceived, as is probably being done in some planes in Madhya Pradesh.

4. Composite homestead projects for the landess in the form of a house, and a small plot to be planted or developed for vegetable cultivation, etc., could be considered. Past efforts at development of elaborate colonies located outside, or on the fringes of villages have often met with failure and abandonment, because these sites, apart from being isolated, do not bear any relation to the worksites of the concerned households. The lesson to be learnt is that homestead development must be composite irrespective of whether the work sought to be created is land based, animal based or based on other assets Each such composite project could then easily become a production estate Such composite schemes could have provisions for drinking water wells, community latrines, bio-gas plansl etc

5. On-farm works, which could comprise farm ponds, wells and field channels on individual holdings of members of the Scheduled Castes and even small and marginal farmers, and development of selected watersheds predominantly inhabited by small and marginal farmers, should be specifically considered. In respect of small farmers this could be linked with a precondition that asset endowment programmes aimed at them should not be subsidy based any longer, but should have thrust on the technological and extension inputs with an element of subsidisation as an incentive for promotion of new technologies and agronomic practices.

6. In identified micro-watersheds and commands of larger irrigation projects field works could be taken up with the specific condition that, recoveries at stipulated rates would be made from non-target group beneficiaries. Such recoveries should go into a local fund to be maintained at the district level to augment resources for maintenance of community assets.

7. Mention has been made earlier of roads. These should be allowed within a certain ceiling and subject to strict adherence to the MNP criteria and the inter-se priorities arising therefrom.

8. Beyond this, if building works have to be taken up, they should be in the form of buildings for banks, godowns for storage of inputs etc., shops and work-sheds for target group beneficiaries, market yards in areas with concentration of population of weaker sections, etc. These should be provided within a framework of integrated spatial planning. Among other things such works should be aimed at raising resources locally, through rents, market fees, etc. so as to add to the overall resource availability for maintenance at the local level.

9. Works of a purely social|community nature such as school buildings, Panchayat Ghars, etc., through important terms of the totality of development needs, must necessarily get a relatively low priority in terms of the mix of goals expected of the Special Employment|Public Works Programmes.

Some methodological issues

The suggested redefinition of objectives and programme content are intended to make Special Employment Programme an integral part of the anti-poverty package instead of viewing them as pure Public Works Programmes per se. This would imply a target group, target areas where there is a concentration of target group population and a substantial redistributive effect.

To an extent this bias has already been provided through the Rural Landless Employment Guarantee Programme which was launched in 1983-84. In practice, however, except for the procedural aspects of project preparation and approval by a Central Committee in the Ministry of Rural Development. (these are of course, significant in themselves), there has not been

much change in the overall approach. The following issues would now have to be considered seriously and in earnestness, so as to provide the nuts and bolts, as it were, for concretising the strategic objectives as stated earlier:

1. In terms of employment, these Programmes can at best be viewed as supplemental in nature, and it would be futile to expect them to lead directly to poverty eradication. It would be logical that such supplementation should be in terms of those, who are considered the poorest, or in other words those who are the focus of attention under the Integrated Rural Development Programme. This convergence in the beneficiary clientale of the two programmes would have to be brought about.

2. This would not be possible without developing institutional mechanisms for registration and identification at the block level. Such mechanisms would in fact become the instruments for measuring employment needs and the extent of unemployment|underemployment in the rural areas. The significance of this has to be seen in the context of the yawning gaps between daily unemployment estimates which stood at 20.74 million persons and the estimates by which 339 million persons were said to be living below the poverty line, in 1980.

3. To provide guided wage employment as suggested, the projects would also have to be chosen carefully. The tendency to take up small and spread out projects, on a panchayat|village wise basis may have to be eschewed. To this extent, the concept of felt preferences of the local community would have to be reoriented without, of course, in any way compromising on the need for community involvement and popular participation.

4. Wherever possible detailed sectoral Master Plan would have to be prepared so as to enable careful prioritisation in the process of capital formation.

5. The redistributive effects of the Programme would come about through : (a) distribution of subsidised foodgrains; (b) direction of works towards the poor; and (c) recoveries of costs from the non-target group beneficiaries of the Programmes. The last of these should not however be limited to the recovery of proportionate State investment used to develop their assets, but should also cover the benefits that the development of rural infrastructure through the Programme would bring, predominantly to those who are better off. Appropriate cesses, betterment levies, etc. to be used for financing part of the investment and maintenance costs would appear to be the best way to bring about, what may be called, a genuine participation of all, in terms of their needs, benefits received and capacity to pay.

To conclude : if conceptualisation of Special Employment and Public Work Programes called by whatever name, is to be done on the lines suggested, that it would be logically inconsistent to retain different but parallel nomenclatures and programmes. In short, there is a strong case for merger of the National Rural Employment Programme and the Rural Landless Employment Guarantee Programme in the Seventh Plan and beyond. □

Record production of potato during 1983-84

THE ALL INDIA PRODUCTION of potato reached an all time high of 12.25 million tonnes during 1983-84, surpassing the 1982-83 production level by 23 per cent. It also surpassed the previous peak of 10.13 million tonnes achieved during 1978-79 by 21 per cent. India is currently the fifth largest producer of potato in the world. During 1970-71 India's rank among potato producing countries was tenth.

There have been notable increases in the production of potato since the inception of planning in 1951-52 and more particularly since 1970-71. This would be evident from the fact that the all India production of potato, which was only 1.66 million tonnes in 1950-51, increased to 2.72 million tonnes in 1960-61, 4.81 million tonnes in 1970-71, 10.13 million tonnes in 1978-79 and 12.25 million tonnes in 1983-84.

Housing shortage in India

THE HOUSING SHORTAGE in India is estimated to be of the order of 23.8 million in 1984. Out of this 18.1 million shortage is in rural areas and 5.7 million in urban areas.

This information has been given in a publication brought out by the National Buildings Organisation (NBO) of the Ministry of Works and Housing. Data pertaining to current building activities in public sector from 1976-77 to 1979-80 and in private sector for the period from 1980 to 1982 have also been given in the publication.

The publication also contains residential building cost indices of some important centres of construction activity. The index of building cost in Delhi has gone up from 759 in 1982 to 847 in 1983 which is an increase of 11.6 per cent. Housing conditions pertaining to Tenure Status of Households, type of construction, number of rooms have been given based on 1971 census. The 1981 data on housing conditions is yet to be released by Registrar General of India.

The publication provides statistical data on level of housing investment in the various successive Five-Year Plans.

International food aid pessimism

G. Srinivasan

The world-wide food aid situation particularly in the third world is very grim in the middle of the Third United Nations Development Decade (1980*s*). *This is compounded by the worst ever draught in Ethiopia, failure of the developed countries in agreeing to the second replenishment of the International Fund for Agricultural Development last year and the increasingly discouraging atmosphere of aid in the western industrial world. This aid pessimism does no credit to the cause of the Third United Nations International Development Strategy, says the author.*

AS THE WORLD IS in the midst of the Third United Nations Development. Decade (1980s) today, developing and less developed countries are literally standing at the crossroads The bygone year 1984 was a watershed in this respect as it brought to light the grim and tragic spectacle of a gruelling and worst drought in Ethiopia on the one hand and failure of the industrial countries in agreeing to the second replenishment of the International Fund for Agricultural Development towards the end of October last.

Baked arid by drought and caught between shrinking prices for their commodity exports and dwindling foreign aid, most African states felt the acute economic hardships in 1984. The United Nations Food and Agriculture Organisation (FAO) contends that an already battered African economy was assailed further in 1984 as widespread drought left 27 parched countries at the mercy of food aid to feed their hungry. Describing 1984 as Africa's worst year since the Great Depression, Adebayo Adedeji, executive-secretary of the UN Commission for Africa, termed the continent as the "very sick child of the international community". Prior to 1984, food production showed signs of revival in 1982 but it fell sharply in 1983. Consequently, African developing countries increased food imports from 2.4 billion dollars in 1981 to 5.8 billion dollars two years later. But, population grew inexorably, currently by about three per cent annually. While the volume of sub-Saharan Africa's food exports was declining by about four per cent a year between the early 1960s and the late 1970s, food imports were growing by seven per cent annually. Projecting recent trends in production, incomes and population to the year 2000, Paulino's exhaustive assessment of African food trends for the International Food Policy Research Institute shows a net deficit of 40 million tonnes of basic food staples in sub-Saharan Africa. This would be about ten times the net shortfall before the recent droughts caused a surge in food imports. Nearly half of this hypothetical deficit would be in Nigeria and large amounts in Ethiopia, Kenya, Tanzania and Mozambique.

Record of food aid not inspiring

Before delineating further upon the crisis gripping Africa, it is essential to note a few things. The Special UN General Assembly in September 1980 on the Third International Development Strategy provided for a massive increase of food aid. This is in keeping with the demands of most developing countries and the recommendations of the UN FAO. As of 1990, the FAO puts the annual food aid "needs" at 29 million tonnes as against an average annual worldwide volume of actual shipments in the past few years of about nine million tonnes. Thus, in order to provide food aid even on a minimum scale, the Strategy sought a minimum target of 10 million tonnes of food

under a new food convention in 1981. The target was likely to be revised upwards to about 18 million tonnes of food to meet requirements by this year though the record so far has not been inspiring. The Economic and Social Council of Asia and the Pacific (ESCAP) published last year reckoned that food aid at the global level for 1981-82 was at 9.4 million tonnes. Though the world cereal stocks rose by 46 million tonnes from 1980-81 to 1981-82, the net spurt in food aid was less than one million tonnes during the same period. The share of food aid in total food imports declined from 28 to 19 per cent during the six years, 1976-77 to 1981-82, indicating increased import financed with other sources. Should this trend persist, as it seems so, the ability of low-income food deficit countries to supply food to their population may be seriously jeopardised.

The World Food Programme (WFP) is an important source of food assistance for the developing countries. The Third International Development Strategy urged that its resources be augmented to the minimum target of one billion dollars for the biennium 1981-82. Contributions reached 837.8 million dollars, of which cash constituted 18.6 per cent. Pledges as a proportion of biennium targets of WFP have been going down since the biennium 1975-76. The proposed target for the biennium 1985-86 is 1,500 million dollars, of which only 1,245 million dollars might be received if the existing rate of pledging persists.

Emergency food aid

The most important distribution methods for food aid include : emergency aid (special feeding programmes and food-for-work projects) and bulk supply. Global emergency aid has in the past years accounted for seven to ten per cent of overall food aid. Some 25 per cent went into project aid; more than two-thirds were bulk supplies. The International Emergency Food Reserve (IEFR), since its inception in 1976, has been assisting developing countries to meet extraordinary contingencies arising out of natural calamities. The modest minimum annual target of 5000,000 tonnes of food was achieved for the first time in 1981. Considering the unpredictability of demands on IEFR, a pledging meeting for 1983-84 was held in March 1982. Notwithstanding a strident plea in the International Development Strategy to maintain the reserve at 500,000 tonnes and to strengthen it if possible, through a legally binding convention, contributions amounted to about one third of the minimum target.

Be that as it may, the United Nations Conference on Trade and Development (UNCTAD) notes that today all developing countries, except for about a dozen, are regular net importers of cereals such as rice, wheat, barley, maize and wheat flour. These countries spend almost 45 per cent of their earnings from exports of their primary products for the financing of their cereal imports and there are more than 50 developing countries whose export earnings from these commodities are not even sufficient to pay for their cereal imports. UNCTAD contends that imports of cereals by developing countries have been rising steadily during the last 30 years and touched an all-time high of more than 100 million tonnes valued at 23.2 billion dollars in 1981. In more recent years, African countries showed the largest growth rates of these imports, followed by the Near East countries, Latin America and the Far East. According to the Organisation for Economic Cooperation and Development (OECD), commitments to Sub-Saharan Africa's agricultural development, which had fallen in 1982, declined further in 1983, with rich donors' assistance to this sector down by an estimated 20 per cent. In the eight Sahelian countries, total net aid disbursement in real terms (1982 prices and exchange rates) in 1983 were 1,000 million dollars, down about 250 million dollars from 1982.

Africa's woes were starkly portrayed by the World Bank in a new report which proposed a "Joint Programme of Action for Sub-Saharan Africa". Africa may give a preview of the long-term food crisis that is only starting to develop. Since 1970, grain output per person has dwindled about one per cent per year. By 1982 it had fallen a total of 12 per cent. In 1983, a year of record drought throughout much of Africa, the grain harvested per person fell an additional 14 per cent for a total drop of 26 per cent since 1970. By 1984, survey teams from the UN FAO reported that 22 African countries were facing famine, including Angola, Chad, Ethiopia, Ghana, Mali, Senegal, Somali, Tanzania and Zimbabwe. The decline in per capita food production in Africa has led to an increase in grain imports from five million tonnes in 1970 to 20 million tonnes in 1983, a four-fold increase in little over a decade. The FAO team estimated that in addition to the usual commercial imports, five million tonnes of emergency relief will be needed in 1984 to stave off famine in the region.

While the severity of the crisis afflicting Africa calls for long-term commitment of sustained aid disbursement as well as food aid on a higher scale, the performance of African agriculture can also be improved by providing (i) adequate farm credit facilities, (b) appropriate producer prices regularly under review for adjustments (iii) sufficient supply and timely delivery of inputs, (iv) adequate marketing, infrastructural and storage facilities and, (v) effective extension services. The donor countries on their part should take into account the following (i) greater rationalisation of aid allocation and more intensive coordination among donors, (ii) putting funds invested to more effective use, and (iii) more effective efforts to bring about more favourable framework conditions and consistent policies on the part of donor countries.

IFAD lacks resources

In 1984, the International Fund for Agricultural Development (IFAD), a small United Nations agen-

(*Continued on page 18*)

The Keynesian relevance in third world

S.K. Ray

In this second and concluding part, the author discusses the concern of Keynesian economics with overall economic phenomena, the flows, propensities, currents, aggregates and its stance of eschewing assumptions and tackling the gargantuan problems relating to employment, output and income at the national level as more relevant to the emerging economies of the third world. Besides, Keynesian economics is working in laying down the economic policies and determining the pattern of growth as well.

IN ORDER TO EXAMINE the relevance of the Keynesian thesis to the economies of the third world, I might as well take up each one of his crucible-concepts, one after the other, as a growth-determinant for a developing economy.

Keynes wrote many books of great importance, but none more epoch-making in the evolution of economic literature and policy than The General Theory. While the book evoked unprecedented response both in his own time and after his time, Keynes himself had an inkling that he was, while writing The General Theory, doing really something big.

In this context, economists writing on Keynes or his literature never tire of what he (Keynes) wrote to George Bernard Shaw. With an uncanny foresight, Keynes wrote to Shaw that he was writing a treatise (The General Theory) which might change the course of history in the development of economics, in terms of its utilitarian development in respect of policy and statecraft. In the decades that followed, how completely has Kevnes been vindicated, and his perspicacity revealed

The General Theory was a bible, so to say, as much for the economists (themselves), who have been assigned in the Keynesian scheme of things an important role in both laying down the economic policies and in determining the pattern of economic growth.

In the preface to his magnum opus Keynes wrote: This book is chiefly addressed to my fellow economists. I hope that it will be intelligible to others. But its main purpose is to deal with different questions of theory, and only in the second place with the applications of this theory to practice.

This was how he began his Preface. And, this is (while referring to the rather revolutionary character of his concepts) how he concluded: The composition of this book has been for the author a long struggle of escape, and so must the reading of it be for most readers if the author's assault upon them is to be successful; a struggle of escape from habitual modes of thought and expression. The ideas which are here expressed so laboriously are extremely simple and should be obvious. The difficulty lies, not in the new ideas, but in escaping from the old ones, which ramify for those brought up as most of us have been, into every corner of our minds.

While violently breaking away from most of the old (classical) beliefs, Keynes called his book 'a general theory' in two connotations. The discourses on economic phenomena with the classical and pre-Keynesian literature have been confined more or less to the peripheral limitations of particular or special set(s) of circumstances, and therefore conclusions could not be derived except by qualifying the

same with the omnipresent remark, ceteris paribus (other things remaining the same).

This led the classicists to build up their theories on assumptions, a la Marshall, Pigou and others; and they could not always precisely validate their conclusions to the economic scenario. Keynes, therefore, took up the exploration of the economic phenomena principally in three broad spectra. First, in sharp contrast with the classical economists, who, so to say, mostly dwelt on the firm or the commodity, Keynes developed his theory of employment, output and income for the entire economic scenario, or in other words, the economy. Keynesian economics, therefore, was throughout concerned with the overall economic phenomena, the flows, propensities, currents and aggregates.

It is not that Keynes turned away completely from the analysis of individual commodities or firms or circumstances, not at all; but he tackled them as sockets in a beehive which was the national economy. His preoccupation, therefore, was with the aggregates of demand, supply and employment, total consumption, investment and saving of the society and national income and output, considered on a macroscope.

He wanted to explore, at any given time or country what was the aggregate level of employment (be it unemployment, disguised unemployment, partial or full employment), and what was required to be done to achieve fuller employment at a satisfactory or viable level of equilibrium He addressed himself to the issues relevant to the national output and income on the same lines.

Keynes, as a matter of fact, was an economist for his country, time and world, and not merely an economic consultant for his firm or treasury (both of which at one time or the other he did serve), and was, therefore, concerned with an economic ethos and strategy for an economic system in its entirety.

Relevance in the third world

Nothing could be more relevant to the third-world economies than the Keynesian stance of eschewing assumptions and tackling the gargantuan problems relating to employment, output and income at the national level. One should consider the undesirable consequences of devising the policy of economic development merely on the edifice of an econometric model built up on a number of assumed variables, or ignoring the forces of some of the impo. tance variables at play, and more than that, not changing the model or the strategy even when circumstances or variables change. This has resulted in economic policy in a number of developing economies, even when wedded to national economic planning, crumbling or going away with every wave of change in the prevailing circumstances.

Secondly, most of the third-world democracies, even when endowed with vast national resources, do provide almost a laboratory-example of the Keynesian approach to economic growth in the national spectrum. For, more than once, and in the case of more than one developing economy, the futility of tackling the vexed question of economic development in small grooves or sectoral patterns, divorced from their national objectives, has been amply illustrated.

As a matter of fact, post-independence or contemporaneous development endeavours of Zaire, India, Thailand, Sri Lanka, Indonesia Argentina, Uganda Nigeria and Bangladesh, amongst others provide a number of typical illustrations of countries which in devising the statecraft on economic development, did not perhaps always reckon with the Keynesian wisdom, and not infrequently got into the rut of trying to develop an area even at the cost of the economy and leading the state to undertake overlapping investments, over-runs of infrastructure and similar other distortions or wastages in the national scene.

The 'Indian' vintage

I do appreciate that this is perhaps stretching the argument a little too far; but, then, Keynes did commence his exercises in economics with the Indian situation of an under-developed economic system, with particular reference to money, currency and finance. And I may not be wrong to believe that this did have an impact on the subsequent ramifications of the Keynesian literature.

Keynes heralded his emergence in economic literature at the beginning of the twentieth century with his madien dissertation. Indian Currency and Finance (1912) In fact, Keynes started his career earlier with Indian affairs "In 1906 he passed second into the civil services, getting his worst marks in economics—'the examiners presumably knew less than I did'—and chose the India office, partly out of regard for John Morley and partly because, in those days of smooth-working gold standard, the Indian currency was lively monetary issue and had been the subject of Royal Commissions and classic controversies."

The quotation is from the obituary on Keynes that appeared in The Times London, on 22 April 1946. Later, in course of the same writing, The Times commented, while mentioning about the first work of Keynes: "To find an economist of comparable influence one would have to go back to Adam Smith. His (Keynes') early interest was primarily in money and foreign exchange, and there is an austere school of thought which regards his Indian Currency and Finance (1912) as his best book."

This view, however, debatable, particularly with his giltedged General Theory having later influenced

the economic thinking ever since the same was published in 1936, deserves to be considered with some seriousness. Let us not overlook the fact that Indian Currency and Finance was not only Keynes' maiden venture, it was also a venture that did count in the corpus of economic literature, and with the background of an underdeveloped economy of the Indian vintage at the beginning of the century, marked by low productivity, abject poverty, imperial preference (another name for long-term preparations), low-key equilibrium, and the rest, this book certainly was embryonic in regard to the later Keynesian dissertations.

In fact, a few years earlier, in 1909 to be precise, Keynes wrote his first article on economics, Recent Economic Events in India, and analysed the consequences of the world-wide depression and financial disturbances of 1907-08 on the Indian situation, with particular reference to the rupee-issue in the domestic and international (particularly sterling) money markets.

In this article, and in his book on Indian economy, Keynes delineated the problems that are relevant to an underdeveloped economy where poverty is the law and barriers to development require to be broken with precipitate impulses for growth to be generated by the state

Simply stated, the Keynesian economics had thus (should we say ?) an Indian background, in the sense that the adumbrations started with the kind of problems that were then prevalent in underdeveloped India. struck with poverty, inequity and low-key equilibrium, and are now manifest in many a country in the third world, and these countries and their problems continued to receive their share of interest in his later writings and speeches particularly from around his Bretton Woods days No wonder therefore, that one should discern a Keynesian relevance to the economic theory and policy of the third world.

Money, the pendulum

The Keynesian economics pivots around money its role in economic growth, through spending, non-spending (hoarding) and investment To any reader of economics, these concepts are well-known and need not be elaborated in the present context A few essentials of the general principles however could be specifically enumerated from the General Theory in the form of a quintessence in broad outline·

1 The common man, as a general rule, prefers to have money in his cash-box or till or bank account rather than have it spent in investments. This tendency for hoarding is rather paradoxical, since by hoarding, people get no return, while by lending, they get a return or interest or profit

2. The paradox is perhaps explained by the feel of security that liquid cash or hoarded money gives to its owner.

3 In case of a country with an uncertain present and a dim future in respect of economic development, the community's desire to own money rather than wealth that would yield income, becomes more manifest as a clear-cut propensity.

4. Interest is the variable that would determine the extent of liquidity-preference of the economy. The greater the rigidities, the unwillingness to lend or invest and the desire to hold or hoard money, the higher will be the hikes in the rate of interest, in order to gradually win over the disincentives to investment.

5. Monetary policy, therefore, would have a major role to play in the nature and extent of economic growth, as only by adjusting the basic monetary factors, e.g interest, lending, spending, investment and output, and eventually employment and income that the pace and programme of economic growth can be delineated.

The basic Keynesian concepts relating to money, as evolved in the Keynesian literature (e g. Indian Currency and Finance, Tract on Monetary Reform, A Treatise on Money and the General Theory, in the main) have been reduced above to deliberate simplicity, in order to bring out its significance in clear-cut overtones to the economies of the third world

The basic rigidities as evidenced in the low-key equilibrium of a developing economy are, let us now emphasise, identical to what, succinctly, is the essentially Keynesian concept on money, as briefly outlined in this article. In fact, to refer again to the Indian economy, which is typical of the third world, these rigidities are so pronounced that there is a parallel or subterranean economy functioning, which is always at war with the official economy.

Hoarding of money is the practice, rather than the exception, and it manifests itself in hoarding of currency, gold, specie, treasure, and every collateral conceivable It would easily negate the government's easy or dear money policies in the way it would require and decide to manoeuvre.

It is my belief that the way the Keynesian monetary principles may operate is in certain directions rather a typical of a very prosperous economic system which has already achieved full or near-full employment, until it reaches the next turn of the economic cycle On the other hand, a third-world developing economy would suit the Keynesian precepts to the hilt, what with the interwoven pheno-

mena of hoarding, liquidity distortions, rate of interest, spending vis-a-vis investment, and the unambiguous emphasis on monetary policy requiring the state to function as a catalytic agent for economic growth.

Investment and employment

Keynes believed that one of the vital determinants of employment was investment, in the kind of modified capitalism that had come to be prevalent in the democratic economies of the world. This is derived from the Keynesian concepts of economic surplus.

In today's world, marked by inequitous distribution of income and wealth, twentyfive per cent of the people by and large absorbs seventyfive per cent of the income. With this being the state of affairs, the total consumption is much less than what it could have been if distribution was equitous or, in other words, if the entire community could optimise the society's spending on consumption.

As this is rather contrary to prevailing social circumstances, this leads to the emergence of a sizeable investible surplus. What with the limitations on aggregate consumption, as indicated above, this surplus could better be deployed on production that need not be lined up for immediate consumption. Such production is what is called investment, which involves economic activities, employment and further production and generation of further surplus.

The policy and programme in regard to such investment is crucial to the economic development that a developing economy of the third world could set before itself as the growth-objectives for the state to pursue

Here again, the third world economies would provide the laboratory for illustrating the Keynesian theory of surplus, investment, employment, output and income in a many-splendoured manner. The inequity of income and distribution on either side of the poverty divide is the most pronounced in such economies, impinging on the availability of the investible surplus. The need and scope of investment as also of the generation of employment are also the maximum in such economies.

Investment being the base for the programmed growth of the economy, it is on the pragmatism reflected in the policies on national investment (and employment) that the pattern of long-term development will be determined. Rest, both at macro and micro levels, including the trends of spending, saving and consumption, will follow, along with equity in distribution, which the state has to arrange and enforce

If the future of the economy looks uncertain, Keynes formulated in his General Theory, the natural tendency for money would be to get hoarded and in order to channelise the surplus available after consumption into investment for formation of capital and wealth), and thereby to generate employment, by winning over the disincentives (to investment), a higher rate of interest will be necessary.

If the expectations of national economic development are bright, the surplus gets naturally transformed into investment, at a much quicker pace of absorption, and at a much softer rate of interest. But if the economy is heading towards a gathering depression, or even if the economy is moribund at a low key disequilibrium, investment will become rigid and prospects of economic revival rather dim, unless by precipitate and aggressive policy the state is able to underwrite economic revival by promoting investment and generating employment and real, output, without at the same time handing over the reins of the economy to the forces of inflation or influences of a parallel substerranean economy.

These are the concepts, both in terms of diagnosis and prognosis, that today apply, mutatis mutandis, to the unique but multi-pronged socio-economic problems of the developing economies of the third world.

Economics of depression

Finally, in the present context, a few words about the Keynesian concept of depression should be relevant, as the the fundamental aspects of a depression-economy in the Keynesian sense are manifest in very clear profile in many a third-world economy. That some of the Keynesian concepts are apt and appropriate in their application to the economic situation of depression is well known. These, therefore, are similarly applicable to many third-world economies suffering from stagnation.

Depression would have the effect of depressing the demand for money, and would enable direct or sponsored spending by the state to somehow, get by, without either a concomitant rise in the rate of interest, or the mounting inflationary pressure on prices offsetting the good effects of governmental spending and investment by the state generating employment and economic growth. It is a case of tight-rope walking in the management of the economy, wherein the natural impulses are towards a contraction of economic activities, while the state somehow endeavours to inject warmth into the system by sponsoring national spending and investment.

There is an element of similarity between the problems and policies of a depression-infested economy and the economics of an underdeveloped low-key equilibrium economy both embarking upon programmes of revival or growth. It is in respect of these similarities that the Keynesian prognosis does really suit as a cure for the ailments of a developing economy that would require growth sans deflation or inflation.

Keynes has sometimes been called an 'economist of depression'. The 'orthodox' Keynesian school, however, resented this and felt that it would be more appropriate to characterise Keynes 'as an anti-cyclical or as an anti-deflation or anti-inflation economist'.

Economist for the third world

My rejoinder would be, why go about it in such a round-about way ? Why not, more succinctly, call Keynes an economist overwhelmingly for the third world ? One may not, in my opinion, be far from the truth. In fact, one may even be at the threshold of the truth, and all that may be necessary is further dedicated research on John Maynard Keynes and the emerging economies of the third world, in order to prove my point to the hilt. □

(Continued from page 13)

cy set up as a "joint venture" by rich industrial countries and oil producers to combat hunger and poverty in the poorest countries, was left without fresh infusion of resources. Set up in 1977 to combat hunger and poverty by making loans to people who were being bypassed by development projects, the issue of IFAD's second replenishment of resources was unresolved in 1984 when talks between the United States and OPEC failed. Western countries have so far donated 58 per cent of their funds and OPEC nations 42 per cent. The agency was given one billion dollars for the first phase of its work from 1978 to 1980 and 1.1 billion dollars for the 1981 to 1983 period. With loans to over 150 projects, the fund is estimated to have helped some 40 million people in 83 developing countries. Even in the first replenishment of 1.1 billion dollars there was a shortage and the second replenishment (1984-86) negotiations have foundered because both the donors, the United States and the OPEC countries could not agree on the likely size of the Fund While the difficulties of the OPEC countries are understandable in view of the continued slide in crude prices and attendant external deficits, the reluctance of the United States to pay its share for a good cause is a matter of deep concern.

All said and done, it is clear that the atomosphere of aid in the western industrial world is none too encouraging and there is widespread anti-development aid sentiment. Everywhere, even in countries that have been exemplary in their development aid such as Sweden and Holland, which invest more than one per cent of gross national product in aid, fresh questions are being posed as to the vindication of development aid, what aid is extended and what is received in return This 'aid pessimism" does no credit to the cause for the Third United Nations International Development Strategy and many of the targets purported for the decade have not even reached half-way stage, though the UN Third Decade's strategy is in a midpoint of the 1980. □

Planning Commission reconstituted

THE PLANNING COMMISSION has been reconstituted with Dr. Man Mohan Singh, Governor, Reserve Bank of India, as the Deputy Chairman of the Commission.

As usual, the Prime Minister will continue to be the Chairman of the Commission.

The other members appointed are Shri Raja Chelliah, Shri Hiten Bhaya and Syed Abid Hussain. They will be in addition to Prof. M. G. K. Menon and Prof. C. H. Hanumantha Rao, two of the existing members

Besides, Union Finance Minister, Shri Vishwanath Pratap Singh, and Union Defence Minister, Shri P. V. Narasimha Rao, will also be members of the Commission.

Minister of State for Planning is Shri K. R. Narayanan.

With this, the Commission has ten members including Chairman, Deputy Chairman, two Union Cabinet Ministers, five whole-time members and the Minister of State for Planning.

National Development Council (NDC) is the enlarged Planning Commission, which, among others, comprises Chief Ministers of States and is a plenary body to consider, formulate and approve of approach to the five year plans, its direction and main thrusts including priorities within the constrants of resources.

The reconstituted Planning Commission is a body of experts representing management, economics and science and technology.

New entrants

Dr. Man Mohan Singh, was Governor of Reserve Bank of India before his present position. Earlier, he held the post of Member-Secretary in the Planning Commission Still earlier, he was Union Finance Secretary.

Shri Raja Chelliah, a public finance expert, was director of the National Institute of Public Finance and Policy, New Delhi, before his present assignment. Earlier, he was a member of the Economic Administration Reforms Commission, headed by Shri L. K. Jha.

Shri Hiten Bhaya, a technology expert, was formerly Chairman of the Hindustan Steels and director of the Indian Institute of Management, Calcutta.

Syed Abid Hussain, an administrative and management expert, was formerly Union Commerce Secretary, belonging to the IAS (Andhra Pradesh Cadre). He has since retired from civil service.

Tasks before the fourth pay commission

Y.R. Hargopal Reddy

Here the author discusses the issues before the fourth Pay Commission in the light of the observations of the Supreme Court of India in Delhi Veterinary Association versus Union of India case (AIR 1984 SCP 1221), hoping that the Pay Commission would take into consideration the sound principles set out by the Supreme Court in the instant case to evolve an equitable national wage policy, to give effect to the Constitutional goal of 'equal pay for equal work' outlined in Article 39(d) of the Constitution.

THE INDIAN CONSTITUTION was adopted to bring about a radical change in the socio-economic conditions of the society. The preamble to the Constitution in the first place guarantees Justice, liberty, equality and fraternity. To give effect to these cherished ideals the framers of the Constitution embodied fundamental rights and directive principles in parts III and IV of the Constitution and made the former justiciable before a Court of law and the later non-justiciable. In the recent years directive principles influenced the decisions of the Supreme Court to a large extent As a result the Court began to read directive principles into fundamental rights to secure socio-economic justice to different sections of the society.

Equal pay for equal work

Article 39 (d) of the Constitution proclaims 'equal pay for equal work for both men and women' as a Constitutional goal. The U.N Human Rights convenants, 1966 also recognized 'fair wages and equal remuneration for work of equal value without distinction of any kind. It is to be noted here that India is also a party to the Human Rights convenants. But since the commencement of the Constitution 'equal pay for equal work' remained as an empty slogan However in the recent years the activist Supreme Court in Randhir Singh v. Union of India (A.I.R. 1982 S.C. 879) conceded the demand for 'equal pay for equal work'. In Randhir Singh the petitioner was a Driver constable in the Delhi Police force under the Delhi Administration and he demanded that his scale of pay should at least be the same as the scale of pay of other drivers in the service of Delhi Administration He further contends that the drivers in Railway Protection Force, Secretariat, non-secretariat offices in Delhi etc, were drawing more than the petitioner. The case of the petitioner is that he discharges the same duties as the rest of the drivers in the other offices but is drawing less. He complains that there is no reason what so ever to discriminate against the petitioner and other driver constables in the fixation of pay scales The Union of India argued that there is no question of any hostile discrimination in the fixation of pay scales since the drivers in the other departments are not similarly situated.

In Randhir Singh the Court opined that where all things are equal, that is, where all relevant considerations are the same, persons holding indentical posts may not be treated differently in the matter of their pay merely because they belong to different departments (A.I R 1982 SC P 881). The Court further observed "Construing Artcles 14 and 16 in the light of the preamble and Article 39 (d), are of the view that the principle 'Equal pay for equal work' is deducible from those articles and may be properly applied to cases of unequal scales of pay based on no classification or irrational classification though those drawing different scales of pay do identical work under the same employer" (A I.R 1982 S C.

882). The observations of the Court may lead to an inference that 'equal pay for equal work' a directive principle acquired the status of a fundamental right because of the most remarkable acts of judicial creativity and activism.

Issues before the Fourth Pay Commission

Delhi Veterinary Association v Union of India (A.I.R. 1984 S.C.P 1221) is another instance where the rationale behind the fixation of pay scales has been questioned by invoking Articles 14, 16 and 39 (d) of the Constitution In the instant case the Supreme Court emphasized upon the factors to be considered by the Fourth Pay Commission while fixing the pay scales of the employees of the Government They are as follow:

The Fourth Pay Commission has to follow certain basic principles in fixing the pay scales of various posts and cadres in the Government service. The degree of skill, strain of work, experience involved, training required, responsibility undertaken, mental and physical requirements, disagreeableness of the task, hazard attendant on work and fatigue involved are according to the Third Pay Commission, some of the relevant factors which should be taken into consideration in fixing pay scales. It follows that the Fourth Pay Commission has to follow the above factors in fixing the pay scales

The method of recruitment, the level at which the initial requirement is made in the hierarchy of service or cadre, minimum educational and technical qualifications prescribed for the post, the nature of dealings with the public, avenues of promotion available and horizontal and vertical relativity with other jobs in the same service or out side, are also relevant factors to be considered by the Fourth Pay Commission

The paying capacity of the Government, the total financial burden which has to be borne by the general public, the disparity between the incomes of Government employees and the incomes of those who are not in Government service and the net amount available for Government at the current taxation level, which appears to be very high when compared with other countries in the world for developmental purposes after paying the salaries and allowances to the Government servants have also to be borne in mind by the Fourth Pay Commission.

There should be an evolution and implementation of a scientific national policy of incomes, wages and prices, which would be applicable not merely to Government services but also to the other sectors of the national economy. As far as possible the needs of a family unit have to be borne in mind in fixing the wage scales

In these days of galloping inflation, care should also be taken to be see that what is fixed today as an adequate pay scale does not become inadequate within a short period by providing an automatic mechanism for the modification of the pay scales

In the instant case the court dimissed the writ petition with the hope that the Fourth Pay Commission which is presided over by a former Judge of the Supreme Court would consider the representation of the petitioners sympathetically. The Court expressed the hope that the Fourth Pay Commission will keep inview all the relevant factors while determining the equitable pay scales for the vast number of employees of the Central Government and of the Union Territories

The Court was also optimistic when it pointed out that the Fourth Pay Commission will not just be another Pay Commission as in the past but will lay down sound principles regarding the salary structure of the public services. It is hoped that the Fourth Pay Commission would take into consideration the sound principles set out by the Supreme Court in its momentous order in the instant case to evolve an equitable national wage policy, to give effect to the Constitutional goal of 'equal pay for equal work' outlined in Article 39(d) of the Constitution. It is also important that persons who are concerned with the fixation of wages will take a note of the factors emphasised by the Supreme Court and will insist upon the Fourth Pay Commission for its adherence to evolve a mutually acceptable National Wage Policy. □

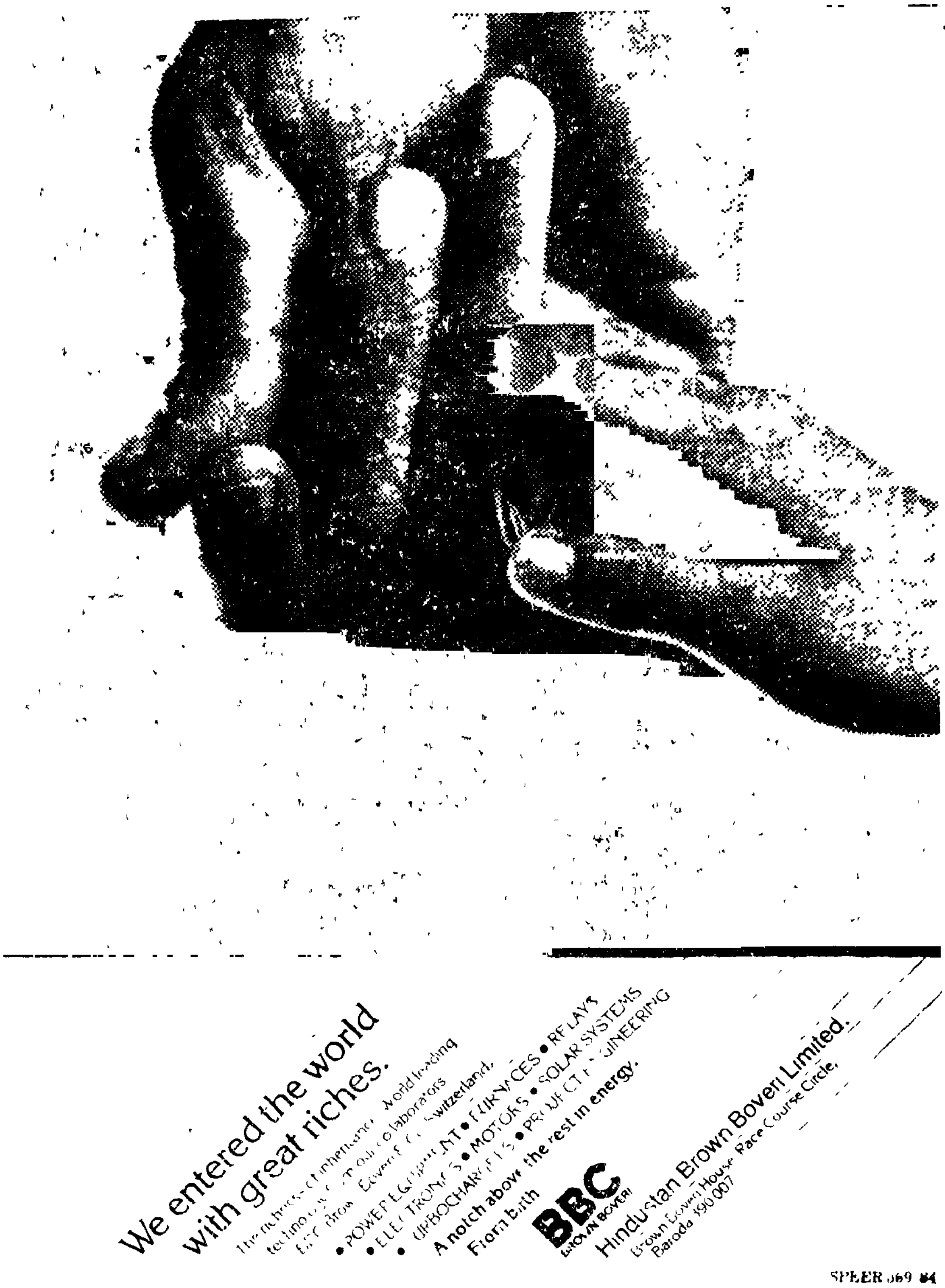
NHDC to open more regional depots

The National Handloom Development Corporation (NHDC) has taken steps to set up regional depots at more places in the country for the timely supply of yarn to the weavers at cheaper rates One such depot has already been opened at Guwahati. Besides opening up yarn depots, the Corporation is also expected to play an important role in marketing of handloom products by opening of marketing outlets throughout the country. A provision of Rs 3 crores have been made for the year 1984-85 for opening of regional depots and retail sale outlets

Details of a long-term marketing strategy to be adopted by the NHDC are being worked out and it is expected that it would be able to make a beginning in the field of marketing of handlooms during the current year itself.

Though primarily a marketing organisation, the Corporation has also been suggested to set up spinning mills, processing houses, reeling units, etc., as captive units for the handloom sector.

The Government of India set up the National Handloom Corporation in 1983 at Lucknow with a view to helping the industry in getting regular supplies of inputs viz. yarn, dyes and chemicals at reasonable prices.


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TOWARDS SOCIAL REVOLUTION
a Case for Economic Democracy -
VASANT SATHE

A Serialisation 12

The Economic Democratic Pattern

Towards the solution

HAVING ANALYSED THE MALADY, by now the reader would, in desperation, ask for the remedy. The remedy also has to achieve the objective, i.e., unity and social justice that would ensure the balanced economic growth of the entire people.

What do we mean by economic growth? The elementary requirement for the growth of an individual in any society is that he should be enabled to either produce goods or services. And then, equally important is the requirement that the goods and services produced by him should be exchanged or distributed. This economic activity in normal terms, left to itself, is operated by what is known as the law of demand and supply. Thus, first, it is the natural need for essential commodities such as food and clothing which become the main demand. Only after that, if a person has larger purchasing power, does not purchasing power generate a demand for items of comfort and luxury? The purchasing power comes as a return for what he has produced and has been able to supply to others either in the form of goods or services. The surplus generated as a result of this exchange becomes the capital. It is this capital which emerges from the economic activity of the labour used on the land, namely, natural resources, and when accumulated and used by the entrepreneur, it becomes an investment to generate growth. Thus the main factors responsible for any economic activity and generation of growth are the availability of land, labour and capital, to be used by the entrepreneur.

To bring about a harmonious and balanced growth in the living conditions of a majority of our population, two measures have to be taken simultaneously.

First, we should increase the purchasing power of the population, mainly living on agriculture. In developing countries, an overwhelming majority of the population is known to be living, at the subsistence level, on agriculture. The only way the purchasing power of the population can be enhanced is by increasing the price of the agricultural produce and the wages of the agricultural labourers. But, the moment this is done, there would be a twofold effect. Immediately, the demand for essential consumer goods would go up and the market, which is at present restricted to a small community of less than 5 to 10 per cent of the population, will jump to about 10 to 15 per cent. This, given the forces of market economics, will tend to push up the prices, resulting in sharp inflationary pressure.

Second, as the labour cost in terms of wages increases, the landed class would tend to employ less agricultural labour and would shift to modes of mechanisation, thus immediately displacing labour and causing unemployment even in the existing labour force.

Hence, the only way to prevent this slideback is to ensure a simultaneous creation of capacity on a decentralised and dispersed basis to produce consumer goods by utilising the labour force in the agricultural sector itself.

Initially, the quality of consumer goods such as cloth and clothing, leather goods, housing, fuel, household articles, soap and other cosmetics may not be of a very high standard, but yet, given a proper marketing system, they would at once create employment and fulfil the consumer demand.

Modern technology, such as in the field of electronic consumer goods, can be harnessed to produce

consumer items on an economy of scale where the assembly of these items (such as transistors, television sets, tape-recorders, calculators and watches) becomes more or less a cottage industry, with only the components being manufactured on a decentralised basis. This would not only generate employment but would also help in directly instilling a scientific temper among the people by the process of direct education.

It has been proved time and again that the so-called illiterate people are capable of adopting and working on the most modern and sophisticated machines once they are taught how to handle them. Girls who had never seen a watch have proved to be the best workers in watch assembly units. Machine tool operators of Ludhiana have shown that, given a sample of the most complex engineering component, they can make a copy of it. Moreover, there is no dearth of trained technicians and scinetists either.

What is needed is a well-planned and balanced growth of both production and distribution of the goods needed to improve the quality of life of an entire people. This cannot be achieved unless they are engaged in the production of these goods and are capable of earning wages, giving them the purchasing power to buy the consumer goods.

Thus, instead of an economy based on a limited market with a section having a near unlimited capacity to buy the high-priced luxury goods, both employment and purchasing power could be provided to people who are without them.

The capitalistic society

If we want to save the situation, we must incorporate all the three factors, namely, land, labour and capital in a planned and balanced manner, so that there is an in-built mechanism of checks and balances and the exploitation of one section by another is prevented. Therefore, the genuine surplus remains available to the whole society for utilisation in the right direction of growth, ensuring simultaneously distributive and social justice. This, in turn, gives impetus for a faster and balanced growth of the entire population, creating larger opportunities for the people.

The basic objective in the field of economic growth is to encourage the production of goods of mass consumption on a scale of economy so as to make them inexpensive and available to the largest number of people. In this process, we have also to think in terms of creating employment opportunities on a larger scale. Along with the production of such goods, automatically, distributive activity must also take place and that would lead to the further growth of employment potential and economic activity.

The most important factor that has to be borne in mind is that in the entire economic activity, concerned with both production and distribution, there is a value-added concept. This concept includes within its scope the question of foreign exchange resources.

Distortions take place in any economic activity only when the result of labour, instead of being fairly and equitably distributed in the very process of the economic activity, gets accumulated in the hands of a few and that accumulation itself becomes power, leading to the further growth of those few who use it to further exploit the rest by denying them a fair return on their labour.

In modern day-to-day practice, the main factors in economic activity can be identified as (1) the entrepreneur or the people who envisage and plan a particular productive activity, (2) labour, which includes managerial, technical, skilled and unskilled categories and (3) capital, which in modern times, is mostly available through financing institutions such as banks and the Life Insurance Corporation. It is the entrepreneur who plans and secures the land, employs labour and obtains capital from the financing institutions. Thus, although he plays the key role, it is not necessary that the entrepreneur himself be a man possessing his own substantial capital. In modern practice, an entrepreneur seldom invests the entire capital. In fact, more than 80 per cent of the investment and capital required for setting up the economic activity, whether production in industry or distribution in trade, is obtained from the financial institutions where the saving of the entire society is accumulated and kept. Thus, the earlier risk which the individual investing the capital had to bear also does not exist in modern times to that extent.

In addition to the financial institutions, capital is made available even from the budget of the government through the revenues that it gets from the people. Thus, it can be rightly claimed that this capital belongs to the people as a whole and, therefore, they can legitimately have a voice or a say in its use through their representatives.

After land and capital, we come to labour. In fact it is human power which collectively creates and produces the goods that are intended to be produced by productive industrial activity.

As we have seen, it is only when one factor deprives the other two factors of their legitimate shares in the productivity activity that the surplus, instead of being fairly distributed, gets accumulated in the hands of a few. This leads to the concealment of the real surplus from the majority of the people and to the creation of unaccounted money. According to Raul Prebisch : "The disparity cannot be remedied by curbing or suppressing the democratic process, rather must the economic process undergo a fundamental transformation, so that individual initiative and market forces can acquire the social efficacy they lack today."

If we consider the fact that the government, as representing the people, is the custodian of public finance, which is the main source of capital, then, when

an entrepreneur or an industrialist or a trader takes the capital from the public financing institutions and hides the real surplus generated from the productive and distributive activity both from the labour employed by him as well as from the financing institutions by showing a false surplus or by siphoning away the surplus during the process of production itself and, in fact, manipulating the accounts to show losses, it is here that the real cheating takes place and unaccounted money starts growing.

Therefore, unless all the three factors contributing to the economic activity, both in the field of production and in that of distribution, carry equal weightage in the management, the likelihood of one being cheated by the other cannot be ruled out.

Even from the purely democratic point of view, if political democracy is to be maintained, then the other side of the coin, namely, economic democracy also has to prevail. In effect, the entire economic activity must also be of the people, by the people and for the people and not in the name of the people, by the few and for the benefit of the fewer.

In our model of economic democracy, what we are propagating is that the organisational structure of economic activity itself must be such as to provide for the democratic participation of all economic forces in a balanced manner.

The economic activity, both in production and distribution, is carried on mainly in two sectors—what are known as the organised sector and the self-employed sector. In the self-employed sector, very often the three factors tend to overlap, particularly because the entrepreneur himself is the self-employed labour, and the scope for exploitation of one by the other at this unorganised small-scale level is negligible. Hence, the model of the economic democratic pattern need not be strictly applied to the unorganised sphere.

But in the organised industrial sphere, the structural model of economic democracy can and must be applied if we really want to bring about a transformation, democratically and peacefully, and if we sincerely wish to bring about a balanced growth in the living standards of our people.

The Economic Democratic Pattern

The basic tenets of the capitalist mode of production and distribution have been analysed in the foregoing paragraphs. The economic progress and the high standard of living in a capitalist system are, in fact, based, as the developments in all such societies show, on a highly inequitable distribution of income in the initial stages. But the system did not suffer from an incapacity to absorb the poor and the assetless because high incomes and high savings were utilised in the early stages of growth in building such a huge structure of production that everyone got employment and earned high incomes in the process. In addition, Western capitalist countries had the advantage of getting cheap raw materials from less developed colonies and then of selling the finished products in captive markets. The high incomes and high savings were not frittered away in conspicuous consumption or concentration of economic power without expanding the production structure. Such a model was not considered to be feasible in the Indian context due to lack of a sound industrial base as also the absence of entrepreneurial cadre and an organised private sector. India had then more traders and businessmen whose ability was more pronounced in generating more money income by exchange (sale and purchase) of goods rather than producing more goods and services in a competitive situation.

Jawaharlal Nehru, the architect of India's economic development, thought it prudent, and rightly so, that the government should lay down the foundations for a relatively non-remunerative structure of production, i.e., basic and capital goods industries, and provide adequate potential for the growth of the private organised sector industries and small-sized industries. This concept of mixed economy was expected to bring about integration for increased production and the equitable distribution of income. The review presented in this work clearly shows that this objective has not been achieved. In addition to the capitalist model, other models for achieving equitable growth such as cooperatives and the joint sector and promotional financed growth through public institutions also failed to achieve the goal. The 20-Point Programme of Mrs. Indira Gandhi is a direct attack on the inequitable distribution of incomes. Income distribution under this programme is sought to be achieved through direct addition of income or economic benefits to the target group, i.e., the people below the poverty line. Under the 20-Point Programme, an attempt is made to provide additions to durable and direct consumption items. But the structure and mode of production are not altered. If this alteration is not made, it would be like trying to warm the house in winter without closing the doors and windows.

The model of the economic democratic pattern proposed here attempts to provide a solution by modifying the structure and the mode of production, in a peaceful manner, without altering the political system.

The new structure

Under this model of economic democracy, in every organised sector, the board of management shall consist of an equal number of people representing the entrepreneur, the financing institution and labour. The entrepreneur shall mean the party which has set up a particular industrial project for trading activity in an organised manner.

Now, presuming that in an organised industry there are nine members on the board of management, three representatives shall be of the entrepreneur, three shall be nominated by the financing institutions, and,

as the capital belongs to the people as a whole, of these three representatives, two shall be nominated by the party representing the people at the Centre and one by the party representing the people in a particular state. Thus, among these three, one will represent the financing institution as a financial expert, the second will represent the political party which has been elected to form the government at the Centre as an elected representative of the people and the third will represent the political party which has been elected by the people to form the government in the state. The idea here is to have direct contact among the representatives of the people involved in a productive activity in order to ensure that the economic objectives of justice and fair play are properly achieved.

The last three members will be elected from among the entire people employed by the industry. All employees, whether they are formally made shareholders or not, will have a right to annually elect three representatives belonging to managerial, technical and non-technical categories, respectively.

Thus, the board of management will have equal representation of all the three major factors of production. There would then be no possibility of denying the knowledge about exact amounts spent on the quality and quantity of raw material used, and the expenses incurred for other productive inputs and the goods produced. The price at which they are sold will also be known fully to the representatives of the labour as well as the representatives of the people nominated through the financing institutions. In modern practice, it has been noticed that the person who organises or plans the industrial or trading activity, eulogistically called an 'entrepreneur', normally gets away with the real surplus.

In the foregoing structure, this would not be possible. The board of management, after having disbursed (1) the return on the capital borrowed, (2) the return on the investment initially made, (3) a fair return to the entrepreneur and (4) a fair return in the form of production incentive or production bonus to labour, shall be able to arrive at the net surplus.

Such an economic structure will apply not only to the entire organised sector in the country, both public and private, but to the entire economic activity in every single field.

As the entire net surplus generated would be known at the very source of economic activity, the whole amount shall belong to the people, i.e., the state. The state, then, as representing the people, would be able to decide the areas in which the national surplus thus generated should be reinvested in order to bring about a growth in the right direction so as not only to provide productive activity but also to ensure the production of essential commodities to secure a minimum decent level of existence to all the members of society.

The pattern in the productive activity being clear, which we can describe as a pattern of triumvir or trimurti, there would be only one economic sector in the country and the entire economic sector would be the national sector. In the organised sector of industrial production, we can also have a pattern of national organisations in which individual units are members in the fields of different industrial activities which can coordinate and co-relate the various functions to ensure smooth functioning. For example, there can be a national body for the manufacture of drugs, steel, cement, fertilisers, coal, energy, food and agricultural produce and so on. At every level, the trimurti structure would reflect the representation in the same manner as in each unit.

It is thus the national bodies, which would have representatives of the elected government on them, that would formulate the policies and programmes for the growth of industrial activity according to the priorities and requirements of the people. Being organisations mainly consisting of those involved in economic activity, they will ensure that minimum constraints are placed on the growth of economic activity, and, in fact, the job of the national organisations, backed by the government, must be to create conditions, and provide facilities, conducive to speedier economic growth involving the maximum utilisation of the work force of the country.

The role of the administration and of the bureaucratic structure under this system would be minimal. Most of the existing bureaucratic machinery would get tagged on as an integral part to one or the other productive or distributive sector and will not have, as at present, a role where it has all the power to say 'yes' or 'no' and to interfere at every stage but without any responsibility for the implementation of policies and programmes. The present administrative pattern, although it consists of some of the best brains and the most capable persons in the country, is entirely based on unaccountability to the people. This system was created to impose checks and counter-checks on a foreign people who could not be trusted and had to be ruled from thousands of miles away. The whole system is, therefore, based fundamentally on the theory of distrust and a pattern is created so as to have checks and counter-checks at every level in the hope of minimising foul play.

Today, without being aware of it, we have virtually built a leviathan in which the entire productive activity of the country is in the hands of those who set up either an industry or a distributive servicing organisation and are actually involved in the economic activity. And yet, we have allowed a huge bureaucratic network to develop as a constraint on them. This apparatus exists only to say 'yes' or 'no' to a project whose file has to pass from the lowest section officer to the highest ministerial office. This state of affairs is not confined to one department or ministry, but is spread over all departments and ministries. This merry-go-round goes on not only for months but for years. The only way to expedite matters and to obtain a 'no objection' certificate is to resort to the lubricant

of unaccounted money, which is used at every decision-making point, from the lowest to the highest level. This is how corruption becomes the rule rather than exception.

Surprisingly, although we have decision-making bodies at higher levels which are supposed to regulate growth in a planned manner, the fact is that most of the persons who belong to those bodies know next to nothing about either the productive activity or the distributive mechanism. This is indeed a travesty of the decision-making process; but because this class also consists of generalists very much like the class of politicians who represent the people and who are the supreme authority presiding over the destiny of the whole society and also because this class of politicians is one of generalists who themselves are as knowledgeable or otherwise about production or productive activity, both these classes seem to have a tacit understanding that they should have the final say in regulating the productive and distributive activities in the country And because these classes are not accountable for actual day-to-day economic activity, they feel that they can get away by putting the blame on those who are actually involved in the economic process both in production and distribution.

The bureaucratic class is the most happily placed one because its members have an assured permanent tenure of service and are not immediately accountable for the results. There are so many levels of decision-making Notings are made in an ambiguous manner so that more than one meaning can always be inferred. During the processing of a particular project, the officers concerned are transferred at regular intervals and the freshly appointed ones can refer to precedents which can support a decision in any desired manner. The ultimate answerability is supposed to be that of the minister who has come to occupy the seat of final decision without knowing much about the field and who is more or less a bird of passage. Normally, even if he is an intelligent person, he takes time to understand the working of a particular ministry and if he starts expressing views different from those of the bureaucratic set-up, he disturbs its working. Very often, when there is a difference of opinion between the minister and the bureaucratic system, it is normally the minister who has to go away or is eased out to make room for another who is more pliable.

Once a very senior cabinet minister said that the most successful minister is one who never disagrees with his secretary. It must be said that our secretariat cadre consists of brilliant, seasoned and experienced bureaucrats, who read the mind of the minister and who are willing to make the minister feel that things are being done according to his wishes. And a wise minister is one who establishes a quick rapport with the secretariat as a good rider does with his horse. Very often we think that a minister, who represents his party and is committed to the election manifesto, can bring about or must bring about drastic changes without realising that, although within the existing framework, a minister, if he takes the bureaucracy along with him, might be able to make some improvement in the working under his charge, the whole system is such that no fundamental change of direction is possible.

The bureaucratic system not only suffers from 'fileria', that is, files moving and swelling, but is tied up in knots all the way which makes it not a three-legged, but a multi-legged monster. To these inherent incapacitating factors must be added the new phenomenon of the influence of black money, which has become the most effective part currency in use and, because of its tremendous power in the hands of a few, has succeeded in eroding the entire value system at all decision-making levels and points of authority from the highest to the lowest. There is not a sphere of life which is not afflicted by this disease, and, like pollution, it has become so all-pervasive that no one who breathes can say that he is free from it.

It is, therefore, indeed amusing to see some representatives of the people performing the drama of vehemently and angrily accusing each other of corruption, knowing fully well that all of them are, directly or indirectly, involved in the process which generates corruption. In fact, not a single Member of Parliament or a Member of a Legislative Assembly can, with any honesty, say that his election expenses were restricted to the amount prescribed by the election law. To say that he does not know from where the extra finances have come is to be either naive or dishonest or both. The battle of accusations among various politicians is probably only a case of cursing those who have got away with a larger share. It is only a matter of degree, but there is no real punch in the attack or criticism about corruption because the person who makes the accusation knows, in his heart of hearts, that he is not free from having partaken of, directly or indirectly, the unaccounted wealth of the country.

Therefore, it is not the individuals who are to blame for the existing situation. Our country consists of brilliant people at every level who are highly capable. The fault, as has been pointed out, lies in the system : at the administrative level for being unaccountable; at the industrial and distributive levels for allowing one sector to cheat the other two; at the political level because the politicians are generally birds of passage, in terms of both their tenure and the terms on which they hold office inasmuch as they are hardly in a position to give guidance to those working under them. In the meantime, the cancer of unaccounted money has grown and has eroded the value system completely that, in effect, it is this unaccounted wealth which dictates the real determining factors at all decision-making levels from top to bottom.

The duty of the administrators and that of the representatives of the people should only be to ensure that in a democratic set-up nobody gets away by cheating or deceiving the rest of the society This

should, indeed, be considered a heinous social crime. In the proposed structure, it should be very easy to hold every person accountable for his income, as well as his expenses. After all, money is what money does, and if every citizen becomes accountable for showing (a) from where his income has come and (b) where he has spent it, it becomes very easy to detect, control and regulate the use of money. The whole concept of taxation would undergo a drastic change because the entire surplus generated would be available with the state The concept of public finance operates only when institutions engaged in the economic activity earn incomes and the state wants to take a part of it in the form of taxation. In the organised sector, the entire surplus would be available with the state and in the unorganised sector, it would be generated in the form of indirect taxes such as sales tax and savings.

The unaccounted black money is invariably used to generate more easy and quick money by investment in areas where the concentrated affluence can be exploited to make faster gains. These areas include the construction and sale of five-star hotels and luxurious residential and commercial buildings with costly fixtures and furniture. Futher, black money is used to purchase expensive antiques and paintings for their resale value. Most of this money is used as purchasing power to buy the comforts and luxuries which flood the metropolitan markets. We thus see the artificial picture of affluence in a few areas of the big metropolitan cities whose main market is the class of people who have a substantial share of the unaccounted money. The whole economic activity, as has been shown earlier, is restricted to a very small section of society. This leads to growing unrest among the unemployed section of the people (mostly youth) in the urban and rural areas. Fortunately, they are so doped by traditional fatalistic attitudes that the only thing that can rouse them has to be barbed in religious clothing or must have some other emotional appeal, communal or linguistic or regional. It is because of this state of affairs that in spite of the nearly stagnating and stifling economic scene, a violent revolution on an economic basis is not taking place and is not likely to take place. But as the pressure of imbalance mounts and as the population grows, the small island consisting of vertical growth skyscrapers is some day bound to be submerged in the ocean of poverty that surrounds it. The unfortunate part is that the uprisings would not be based on an economic foundation, but could erupt in the form of disintegrating forces with communal, casteist, linguistic and regional characteristics. In such a situation, a leadership which can enthuse and command the confidence of the entire people throughout the length and breadth of the country is also likely to be lacking. One need not be a prophet or a soothsayer to foretell the likely dangers of disintegration that would result.

All we are seeking is to introduce a structural change through which economic democracy becomes possible at the production and distribution levels. In the new structure, the job of the administration would not be to control and stifle, but to serve as a catalyst and to assist the economic process. Also, planning and decision-making would be so organised that once broad policies have been laid down by the representatives of the people, it would be left to those who are proficient in a particular field of activity to organise the growth in that field within the framework of the pattern of economic democracy and to achieve the best results for which they would be wholly accountable. In effect, the entire change is to make the system one of accountability; a system which would be result-oriented and in which the productive forces would be fully involved, with a sense of belonging, as equal partners. This in essence is economic democracy, without which even political democracy becomes meaningless.

(Next issue · a policy for technology)

Rs. 16.5 crore worth railway wagons to Uganda

The Projects & Equipment Corporation of India Ltd., a public sector undertaking under the Ministry of Commerce, will supply 300 railway wagons valued at Rs 16.5 crores to Uganda The offer for supply was made in response to a direct enquiry received from Uganda Railways and the contract was secured against stiff competition from several countries.

Over the last 15 years, more than 7,000 railway wagons valued at over Rs. 90 crores have been exported to several countries. These include Poland, Iran, Yugoslavia, Malaysia, Bangladesh, Tanzania, Uganda, Sri Lanka and Vietnam.

To facilitate exports of railway wagons, cash compensatory support at the rate of 15 per cent is made available and certain varieties of steel are also being supplied at international prices for export purposes.

With a view to increasing export of wagons, the Ministry of Commerce has initiated steps to explore the possibilities of setting up joint ventures for assembly operations in third world countries in order to reduce freight costs. In addition, the possibilities of exporting Indian component in CKD (completely knocked-down) condition are also being explored.

GRAMMAR OF PLANNING

A Serealisation 13

The plan monitoring and evaluation

P.R. Dubhashi

Constant monitoring and evaluation are necessary for successful implementation of plan schemes. In fact, success of planning depends on scientific formulations, vigorous implementation at the field level, and close and continuous supervision, monitoring, evaluation and modification, says the author.

PLANNING HAS NO MEANING except in terms of the goods that it is able to deliver Planning is not an end in itself. It is a means to an end and the end is the achievement of pre-determined goals. These goals, to start with, are couched in aggregate terms such as increasing gross national products, increasing per capita income, the distribution of the gross national product in a more equitable manner and the provision of full employment opportunities.

However, these aggregate national goals have to be disaggregated sectorwise and sub-sectorwise and thus, we come at the various physical targets in terms of million tonnes of foodgrains, coal or steel or the quantities of cargo or passengers moved by the Railways, etc.

Organisational machinery

Related to these physical targets are financial allocations. However, mere financial allocations do not result in physical achievements. There has to be the necessary organisation and personnel who could carry out these programmes making best use of financial resources to achieve maximum results. Every plan scheme or project must, therefore, take into account the organisational machinery through which plans and programmes will be implemented. If the organisational machinery is adequate, plans have every chance of success.

If the plans fail and the planned targets are not achieved, it does not behove the planner to find fault with the implementation machinery. A planner cannot quarrel with his tools. His plan must take into account the organisational machinery and must ensure that it is adequate to deliver the goods. In this sense, planning and implementation are inseparable. A plan is as good as the results it is able to accomplish. A paper plan is no plan at all. A plan which takes care of the efficiency in implementation would be able to accomplish much more than what it seeks to do and it would also be able to accomplish it at the least cost. In other words, with the given investment, it would achieve more than commensurate results. It would be able to bring down the capital output ratio. Per unit of investment of capital, it would be able to achieve larger quantity of output.

Constant monitoring

Unfortunately, Indian planning has been deficient in this respect all these years. The contemplated results are not accomplished in terms of the increase of the national product. While we have been aiming at a steady growth rate of five per cent through all our Five Year Plans, in actual fact, the growth rate has hovered around three per cent. Also, because of cost escalation and inflation, the physical plan has been generally smaller than the financial plan. Because of less than optimum efficiency in the implementation of plan programmes, the capital output ratio has shown a tendency to rise.

All this underlines the importance of paying continuous attention to setting up a strong and efficient machinery of implementation of plan schemes and their constant monitoring and evaluation with a view to ensuring satisfactory results. These aspects have been

sadly neglected in the past and immediate steps need to be taken up to improve the monitoring of implementation Monitoring should not be confined only to the national level. As we go nearer the field, monitoring has to be all the more intensive. There should be close and continuous supervision over the actual implementation of plan programmes in the field and their periodic monitoring and evaluation.

Real objectives

The monitoring of implementation, however, is not as easy as it looks. In the past, monitoring has simply meant checking of expenditure. This is not only unsatisfactory but may even be counter-productive. Often it results in the rush of expenditure in the closing months of the financial year. What is required is monitoring and evaluation with reference to the real objectives of a project and the real objectives are not in either financial terms or even physical terms.

The manner in which the results are obtained is also equally important. If the results are accomplished by wrong means, there may be a temporary gain but a setback in the long run. For example, if the programmes of family planning are implemented through coercion, targets regarding tubectomy or vasectomy may be accomplished. But use of coercive methods may create such a strong revulsion against the family planning programme that they would receive a long term set back. What is required is the need to educate the target group and solicit their voluntary participation and cooperation. This aspect is important in respect of most of our programmes.

We often describe planning in India as democratic planning and in democratic planning, voluntary participation of the people is of very great significance. Also, what we are seeking to achieve are enduring results and not some short-term physical accomplishments. In the hurry to show results. these aspects are totally forgotten and, in the process, long-range damage is done to institutions and organisations, and the morale and motivation of the people

It follows that while data and statistics are important, evaluation and monitoring are not entirely a quantitative process. There is also a qualitative process involved A satisfactory system of monitoring and evaluation should take care of the qualitative, no less than the quantitative aspects of the plan implementation.

Final objectives

Monitoring and evaluation ought to take care of the 'ultimate', 'penultimate' as well as 'instrumental' targets and goals of every plan programme. The 'ultimate targets' have to be in terms of the final objectives of a project or scheme—in terms of output generated or employment opportunities created. The 'penultimate targets' may have to be one stage before the realisation of the ultimate targets Thus, if the ultimate target is in terms of the millions tonnes of foodgrains produced, the 'penultimate targets' may have to be in terms of distribution of seeds, fertilisers and insecticides or utilisation of irrigation potential. The 'instrumental target' have to be in terms of the means through which the penultimate and ultimate targets are accomplished. Thus, they may be in terms of the centres for the distribution of inputs, the personnel incharge of such centres, construction of wells and field channels necessary to create the irrigation potential, the field organisation required for discharging this work, etc.

One of the defects of our planning is that while 'ultimate targets' are fixed; 'penultimate' and 'instrumental targets' are left vague In the light of our experience of plan implementation in the past, it should be obvious that unless we fix up 'penultimate' or 'instrumental' targets which are consistent with the 'ultimate targets', we cannot realise the plan goals. Per contra, we cannot stop at fixing the 'penultimate' goals. Thus, increasing area under high-yielding varieties of seeds can only be a penultimate goal. The realisation of this penultimate goal would have no meaning unless we are sure at the same time that spread of area under high-yielding varieties also results in increased production of foodgrains or other commercial crops. High-yielding varieties of seeds have to be accompanied by increased supply of fertilisers and irrigation water. HYV programme has to be a part of a package and where the package is missing, realising the goals regarding only one item does not show results

Plan implementation requires coordination without which programmes may go on in a lopsided fashion and results would not be accomplished. Monitoring and evaluation, therefore, has to take note of the realisation of the ultimate goals or the ultimate impact of planning and cannot stop short of them and remain confined to some instrumental action.

Two broad components

Plan programmes can broadly be divided into two components. The first relates to those activities where investments are concentrated and the second where these are dispersed. Irrigation and hydro-electric projects and establishment of plants and erection of buildings fall in the first category while scheme, such as those related to agriculture like agriculture extension or cooperative development or crop production would fall into the second category. The success of planning in the first component substantially depends on the organised machinery of government but the success of the schemes falling in the latter component depends as much on people's initiative as on the machinery of government Indeed. in respect of these schemes, the main role of the machinery of government is to motivate and active millions of farmers on whose efforts depends the accomplishment of goals.

Monitoring and evaluation of activities falling in the first category is comparatively much easier than falling

ı the second category. In spite of this, surprisingly nough, evaluation has paid more attention to the atter than to the former. This balance needs to be et right. There has been a lot of schedules slippage n respect of several irrigation and hydro-electric pro-ects and establishment of public enterprises resulting n considerable losses. An evaluation of these projects would have brought out the deficiencies. One of them night well be dispersal of resources over too large number of projects leading to the delayed completion f several projects. In a hurry to bring in too many rojects in the ambit of planning, no more than token rovisions are made in respect of several projects which hen go on hibernating for any number of years. This hardly a way of optimising plan resources. In fact, is project planning of this sort that might have led the increasing capital output ratio which has been disturbing feature of economic development in our ountry.

Expansion of the public sector has been an import-nt feature of planning in our country. But it is sad reflect that massive investment in public sector nterprises has not yielded the necessary dividend. It necessary to undertake comprehensive evaluation of he public sector enterprises in order to set right the eficiencies of the past.

Remedial measures

Evaluation has to go deeper than doing mere cost-enefit analysis. It must bring out latent as well as atent deficiencies—deficiencies in organisations, insti-utions and personnel so that these could be set right. or evaluation of this sort, it might well be necessary follow the case study method to supplement the ethods of collection of data en masse and their nalysis.

While evaluation may require a specialised achinery, monitoring has to be an in-built feature f the normal machinery of administration. For every nportant scheme or enterprises, there should be a eview and monitoring committee in every department r organisation of government. On this review com-ittee, there should be all persons connected with that articular scheme or enterprise. The review committee ught to meet periodically at regular intervals. It hould have a regular management information system which would feed the review committee regularly in erms of what have been called the instrumental, enultimate and ultimate targets. The review committee ught to pin-point shortfalls or deficiencies whenever hey occur and immediately set about rectifying these eficiencies before any further damage is done. An lert machinery for review and monitoring can save nuch wastage of resources and enable plan progress o be made on the right lines.

Past experience would show that there has been a endency to make too many changes in the plan chemes. These are based more on some snap judge-nents of people in authority than on the basis of ystematic review, monitoring and evaluation. It is necessary to avoid unnecessary frequent changes. It must be realised that while policy changes could be made quickly at the headquarters, their communication and implementation in the field necessarily takes a long time. Planners and policy makers ought to provide sufficient time to those incharge of implementation to show results. A mere declaration of plan objective or policy is not synonymous with plan implementation.

Success of planning depends on scientific formula-tions, their disaggregation with reference to local conditions, vigorous implementation at the field level, close and continuous supervision, tight monitoring, expert appraisal and evaluation, and modification and rectification based on such appraisal and evaluation.

In the next issue :
The International Planning

Saving 20,000 lives a day

RECENT BREAKTHROUGHS in both scientific knowledge and social organisation have made possible a children's revolution which could save the lives of half the 40,000 children who now die each day and protect the health of many millions more, says the UNICEF State of the World's Children report 1984.

Oral rehydration

Dehydration-caused by diarrhoea—is the world's biggest killer of children (5 million deaths a year). The discovery of oral rehydration therapy (ORT) now makes it possible to save most of those lives by a simple and cheap treatment administered by the parents in the child's own home.

Immunisation

Extending immunisation programmes with new vaccines—and educating parents about the need for full protection—could prevent the six main immunis-able diseases from killing 5 million children a year and disabling 5 million more.

Population

There has never been a steep fall in birth rates which has not been preceded by a steep fall in death rates. One reason is that if parents are more confident that their children will survive, then they are more willing to consider family planning. So in practice, a revolution in child survival would help to stabilise world population at an earlier time and at a lower level.

Breast-Feeding

The promotion of present-day knowledge about breast-feeding and weaning—and about the dangers of bottle-feeding in poor communities—could save the lives and protect the health of millions of infants.

Growth Monitoring

Growth monitoring using inexpensive modern growth charts can help parents themselves to prevent up to half of the child malnutrition in the developing world. □

Medical treatment of coronary artery disease

Prof. M.L. Bhatia

Coronary artery disease is a disease of the heart consequential to disease of the coronary arteries. It is an important cause of disability and deaths in India. Here the author discusses medical aspects and treatment of angina and heart attack which emanate from disease of the coronary arteries. Anginal episode is not life threatening whereas heart attack is a life threatening situation. Various do's and dont's including preventive, protective and curative measures have been suggested herein.

HEART DISEASE IS an important cause of disability and deaths in our country. It is estimated that more than 5 per cent of registered deaths in India are due to heart disease and that 6,43,625 Indians died of heart disease in 1978 The percentage distribution of death is more than that of all categories of cancer, which is 2.5 per cent.

Coronary artery disease

Many types of heart disease exist. One of these is coronary artery disease, i e. disease of the heart consequent to disease of the coronary arteries. The conservative estimates of its prevalence in our country in general population above the age of 40 are 2.5 per cent. If this is so, then the risk group consists of 136.9 millions, of which 3.42 millions have the disease. At the estimated population growth, the number of such persons in 2000 A.D. will be 10 13 millions—a large number indeed! The number could be much more keeping in view the rapidly increasing number of patients with this disease seen by doctors all over India.

Coronary artery disease is consequent to the disease of the coronary arteries. Coronary arteries are the blood vessels which provide the heart with the oxygen and other nourishment it needs. The heart is basically a hollow pump which by its action of contraction and relaxation pumps blood throughout the body providing nourishment to all organs and cells. Blood flows out from the heart through the arteries and returns to it through veins. As blood leaves the heart, the first artery it passes through is the aorta, and the coronary arteries branch off from it. These arteries wrap around the heart and carry blood into every part of the heart muscle.

Cause of coronary artery disease

Many diseases affect the coronary arteries. Of these atheroscelrosis or hardening of the coronary arteries is the commonest cause accounting for more than 90 per cent of coronary artery disease. In course of time, fatty materials (specially cholesterol, a waxy looking fat commonly present in animal fats and oils, in yolk of egg and in many other foods) stick to the inside walls of the arteries. They may start foming plagues. The process starts early in life and progresses slowly over a lifetime. When the lumen of the artery becomes significantly narrow (50 per cent or more) by this clogging the flow of blood through the artery is markedly reduced, affecting blood flow to the heart mustle. The result is coronary artery diseases.

Risk factors

There is still much to learn about the causes of coronary artery disease. In other words about the causes of athero-scelrosis, available information suggests that certain factors in a person' background of life style make the likelihood of developing coronary artery disease greater. These are called risk factors.

Many such risk factors have been indentified. In general it seems that the combination of several risk factors rather than any particular risk factor increases someone's chances of developing coronary artery disease.

Some risk factors cannot be helped, and therefore, cannot change. These are called the unmodifiable risk factors, which include a family history of coronary heart disease, the male sex and age above 40 years. More important are the modifiable risk factors which are controllable. These often result from one's life style, the things one eats and the things that one does.

The important ones of these factors are :

* High blood pressure
* Cigarette smoking
* Raised levels of blood cholesterol
* Overweight
* Increased stress and tension in life.
* A sedentary life style.

Of course not everyone with some or even all these factors will develop coronary artery disease, and some people with coronary artery disease may not have any of these factors. In fact only about 50 per cent of the people with coronary artery disease have one or more such risk factors. But the risk of developing coronary artery disease is greater if the risk factors are present and the more the risk factors, the greater the risk. Combination of risk factors is not simply adding them, it is more like multiplying them.

While a lot is known about coronary artery disease and risk factors, even more remains unknown. However, there is much evidence that by lowering the risk factors the disease may be kept away from progressing. These are the precautions one can take, which will make a difference.

Manifestation of coronary artery disease

Coronary artery disease affects a person in many ways. There is no standard set of presentation of CA for every petient. However, the usual ways in which its presence is felt are :

* Angina
* Heart attack (myccardial infarction)
* Irregularity of the heart
* Heart failure
* Sudden death.

The topic of heart attack has been discussed in one of the earlier issues in this series. Now we discuss the other important aspect of this serious heart disease-angina or, as it is medically called, angina pectoris.

Angina

Angina is one of the several possible results of coronary artery disease. It is the name given to the discomfort which results when the heart muscle temporarily does not get enough blood and oxygen; when the supply of blood and oxygen are not adequate to the heart muscle's requirement. This discomfort is the heart's "distress signal".

Presentation of angina

Anginal discomfort is often called 'pain' but it may be felt differently by different persons. It may thus be felt as a mild discomfort, a dull ache in the chest or something else entirely like extreme tiredness, indigestion, burning, squeezing heaviness, fullness, or tightness in the chest, upper stomach or throat, or as heaviness and a sensation of weight in the arms, specially in the left. It is described by some as a choking sensation, shortness of breath or pain in jaw, gums, teeth, throat or in the neck between the shoulders.

The location of the anginal discomfort and its severity also varies from person to person. It may be occur in one or several places. It may start at one location and travel to others. The anginal episode is generally short, lasting for 2 to 5 minutes. Its frequency may vary from once in several weeks to many attacks per day.

The types of activities which bring an angina attack vary from person to person. Most of these activities make the heart work harder (increasing heart rate and blood pressure), and thereby increase its requirements of blood supply which cannot be met because of restricted blood flow through the clogged arteries.

Some common activities which may present angina are :

* Excercise or exertion
* Heavy meals
* Walking uphill or up a staircase or walking in cold weather or against a strong cold wind
* Stress, fight, anger and other emotional conditions
* Sexual intercourse
* Being in a higher altitude

"Angina" and "heart attack" are different

Angina and heart attack are not the same thing although the underlying cause, viz. disease of the coronary arteries, is common to both. Angina is caused by a temporary reduction in the amount of blood and oxygen that reaches the heart, most commonly due to narrowed coronary artery. An anginal episode is not life threatening and it does not permanently damage some part of the heart muscle.

On the other hand, a heart attack results from a complete or almost complete deprivation of blood and oxygen supply to a part of the heart for a long period (generally for more than 30 minutes). After

this period the stoppage is complete and sustained. The part of heart muscle so affected dies, and is later replaced by scar tissue. A heart attack is a 'life threatening' situation.

Diagnosing angina and coronary artery disease

It is common to begin with a history of the symptoms and then perform a physical examination. The history provides the most useful information and helps not only in diagnosis but also the identification of its severity, degree or incapacity suffered, other disease factors present etc. Such a history includes not only the patient's problems but also a detailed family history. Physical examination is detailed and includes checking of weight, blood pressure, pulse, listening to the heart and lungs etc. to determine the state of general health and signs of heart disease and its complications.

Diagnosis also includes conducting several tests. These include a blood sample analysis for blood sugar, cholesterol and other chemicals, an X-ray of the chest for ascertaining heart size, a resting electrocardiogram and an exercise ECG. The last is of special importance in diagnosing heart disease including coronary artery disease.

An exercise ECG shows how the heart reacts to excercise In many persons with angina the resting ECG may not show any change, but specific changes become manifest in the exercise EGC Analysis of these changes and the degree of excercise intolerance is very useful in diagnosing and quantifying the severity of coronary artery disease.

Radiosotope scanning of the heart shows how much blood does the heart pump with each heart beat and also the size, shape and contraction of the heart It may show specific areas of decreased blood flow due to coronary artery disease.

Cardiac cotheterisation and coronary angiography provide a precise indication of how well the heart is functioning and pinpoint the arteries which are narrowed, the degree of such narrowing and the site of the blocks This test is always done before a surgical procedure like bypass surgery is taken up.

Medical treatment of coronary disease

(i) Control risk factors :

Control of risk factors is essential. The high blood pressure must be controlled by drugs or without drugs, as required. Changes in life style and dietary changes are helpful, like cutting down on the salt consumption in the diet and losing weight if the person is overweight. Cigarette smoking is specially harmful. Not only it is an important coronary risk factor, but also the smoking may precipitate or worsen angina, cause irregular heart beats and reduce chances of recovery after a heart attack. Stopping cigarette smoking can repair some of this damage. It is never too late to give up smoking. It should also be noted that no cigarette is safe.

(ii) Dietary Control :

Adequate dietary control should be exercised regarding calories, the quantity and quality of fats and salt intake. To avoid too much fat and cholesterol it is necessry to eat lean meat, fish and poultry, reduce the amount of eggs and organs meats like liver and limit use of butter, cream and other saturated fats. Fried food should be limited or avoided Extra salt on the table should not be used. Losing weight is beneficial and can be achieved by controlling diet and judicious amount of exercise. Exercise increases the capacity of doing physical work with lesser degree of circulatory stress and strain; it increases physical stamina. The amount and type of excercise required varies from one person to another and is best prescribed by your doctor.

(iii) Controlling stress :

Control and reduction of stress is necessary. Adopting a simpler life style, taking a weekend off, regular vacations, more time for fun and recreation, pursuing active hobbies, relaxation exercises, Yoga, transcendental meditation, etc, which help in physical and mental relaxation are extremely beneficial.

(iv) Drug treatment :

Drugs are often required for treatment of CAD condition For short term and immediate benefit nitrates like nitroglycerin are used under the prescription and advice of the doctor For long term benefits, the drugs like beta blockers or calcium blocking drugs are currently used The need for these drugs and the quantity required varies from patient to patient, which can be best decided by your doctor. It is important that you follow the prescribed regimen—When and how much It may also be necessary to develop a schedule, if many drugs are used, so that you are not confused and do not miss the drugs.

Surgery for coronary artery disease, specially for angina

Treatment for angina aims at improving blood supply to the heart muscle. Usually these goals are met through medications and changes in life style. But if these do not help and angina continues to interfere with everyday life, surgical treatment is to be considered, and the result may be quite satisfactory. The possibility of surgery depends upon several factors including the overall condition of the heart. □

(Based on public lectures of All India Institute of Medical Sciences, New Delhi).

Correction

In Yojana September 1-15, 1984 issue, on page 23, in the article "Towards Self-reliance in mining machinery", the correct name of the second author is P. N. Shali and not P. N. Sahi as printed.

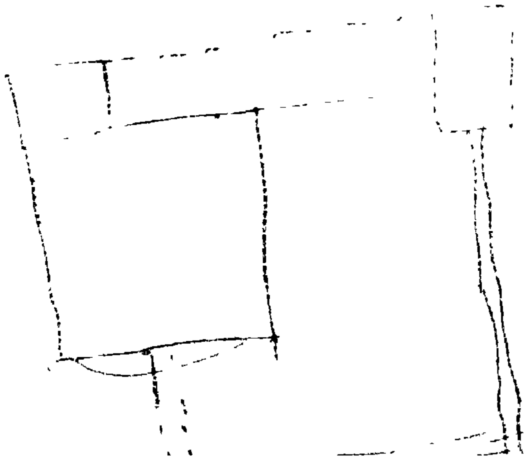
Editor

Plan to settle 25,000 shifting cultivator families

TWENTY FIVE THOUSAND shifting cultivator families are proposed to be resettled during the Seventh Five-Year Plan at an estimated expenditure of Rs. 75 crores.

Shifting cultivation, or Jhum, is prevalent in 233 blocks of 60 districts in 13 States and two Union Territories. To deal with the problem of shifting cultivation, a Central Sector Scheme was introduced in 1977-78 in Orissa, the North-Eastern States and the Union Territories of Arunachal Pradesh and Mizoram with 100 per cent Central assistance. Later, in 1979-80, the scheme was transferred to the State sector on the recommendation of the National Development Council. The scheme, however, continued in Arunachal Pradesh and Mizoram.

According to the Task Force on Shifting Cultivation report submitted in 1983, shifting cultivation is practised in 4.33 million hectares of land and about 6.22 lakh families go in for this practice covering an area of about a million hectares annually. The Task Force had recommended that the scheme for the control of shifting cultivation should be revived in all the concerned States and an investment up to Rs. 30,000 per Jhumia family could be undertaken. The Task Force had also suggested a programme for the resettlement of 16,000 Jhumia families at a cost of Rs. 50 crore during the Seventh Plan, which was endorsed by the Board on Shifting Cultivation, at the instance of the Committee of Ministers for Economic Development. of the North-Eastern Region. An outlay of Rs. 75 crore to resettle 25,000 shifting cultivators has been recommended for the Seventh Plan. □



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Oil industry takes massive strides

THE PETROLEUM INDUSTRY in the country has taken massive strides during the Sixth Five Year Plan with crude oil production pushed by more than 150 per cent and the natural gas production increased by over 100 per cent.

In 1979-80, the indigenous crude production was 11.8 million tonnes which steadily increased to 16.2 million tonnes in 1981-82, 21.1 million tonnes in 1982-83 and 26 million tonnes in 1983-84. By the end of 1984-85 the domestic crude production is expected to reach 29.6 million tonnes.

Similarly, the production of natural gas increased from 2.0 billion cubic metres in 1979-80, to about six billion cubic metres in 1983-84. The production of natural gas was expected to go up further in the concluding year of the Sixth Plan.

With rising cost of importing oil and tight supply conditions in the world market during 1979-80 the Sixth Plan laid great emphasis on accelerating the programme of oil exploration and development in the country. The wide variety of efforts during the last four to five years have led to augmentation of the initial geological reserves of crude oil from 2340 million tonnes on January 1, 1980 to 3000 million tonnes on January 1, 1984. The recoverable reserves of crude oil have increased during this period from 366 million tonnes to 511 million tonnes.

The initial geological gas reserves have also increased from 826 billion cubic metres to 1006 billion cubic metres and the recoverable gas reserves have gone up from 352 billion cubic metres to 478 billion cubic metres during the four-year period beginning January 1, 1980.

Exploration efforts of the Oil and Natural Gas Commission have led to discovery of hydrocarbons bearing structures in various parts of Gujarat, Rajasthan, Assam, Andhra Pradesh, Nagaland and Tripura and also in the offshore areas west of Bombay and off the Godavari coast. Similar structures were also located at Portonovo in the Cauvery basin and the Palk Bay.

The strides taken by the oil industry have led to a great degree of self-reliance. At the beginning of the Sixth Plan, the total crude oil requirements were of the order of 33 million tonnes necessitating imports of about 21 million tonnes. By the end of the current plan period, with 29 to 30 million tonnes of indigenous crude oil production, the degree of self-reliance will be as high as 70 per cent with total imports of crude reduced to a little over seven million tonnes. The imports of petroleum products are expected to be under five million tonnes by the end of 1984-85.

The refinery capacity expansion has kept pace with the demand for petroleum products. At the beginning of the Sixth Plan 11 operating refineries had a total capacity of 31.80 million tonnes which increased to 37.80 million tonnes with the commissioning of Mathura Refinery in early 1982. The programme for expanding refinery capacity by another 7.75 million tonnes along with setting up of secondary processing facilities now under implementation would further raise the refinery capacity to 45.5 million tonnes by the end of 1984-85.

In addition, plans are underway to set up two new refineries each of six million tonnes per year capacity—one near Karnal in North-West and the other near Bangalore on West Coast. □

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Income inequality and socialism

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Human resource development

NEXT ISSUE

Chemicals—friend or foe !

Export of marine products during April-December, 1984

ACCORDING TO PROVISIONAL export figures available with the Ministry of Commerce, 59,500 tonnes of mari 984. products valued at Rs. 275.31 crores were exported during the period April—December arget Th ue present tempo of export of products in this field indicated that the export ld be ref 93,800 tonnes of marine products worth Rs. 400 crores for the year 1984-85 to achieved.

There has been a steady increase of exports of marine products since the beginning of the Sixth Plan. Beginning with an export figure of Rs. 234.84 crores worth of marine products in 1980-81, the figure swelled to Rs. 373 02 crores during 1983-84 and is likely to touch Rs. 400 crores in the current year.

Among the main items exported are frozen shrimps which in terms of value comprised 84 per cent and in terms of quantity 59 per cent of the total exports of marine products during 1983-84 when 54,444 tonnes of frozen shrimps valued at Rs. 314 81 crores were exported. Export of fresh frozen fish was next with 22,573 tonnes worth Rs. 29 10 crores. In the current year as well, export of shrimps accounts for the major portion of exports with 39,500 tonnes of frozen shrimps valued at Rs. 240.95 crores, having been exported during the period April—December, 1984.

Besides shrimps and prawn, frozen lobster tails, frozen froglegs, frozen cuttlefish & fillets, frozen squids, canned shrimp, dried fish. dried shrimp, shark fins & fish maws also find markets outside the country.

Major export markets are Japan and the USA, which account for 64 40 per cent and 13 35 per cent respectively of our exports of marine products in terms of value of exports. The third largest market is U.K., which has a 5 5 per cent share. Other buyers accounting for less than 3 per cent each of our exports in this field are Singapore, United Arab Emirates, Kuwait, Netherlands, Taiwan, France and Sri Lanka.□

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Human resource development

R. Venkataraman

Calling for mobilization of a sound human resource development as a strategy for all round economic development in the Seventh Plan, the author suggests total development of an individual in society in relation to his or her social, cultural and political manifestation and aspirations. Besides, traditional skills of the rural artisans needed to be modernised to accelerate the pace of productivity and growth.

HUMAN RESOURCES ARE perhaps the most strategic and critical determinant of growth, and yet its development has not received the required attention. Even though a country may possess abundant physical resources it cannot make rapid economic and social advancement unless there are people who are enterprising and have developed necessary skills and attitudes. Human effort is required to mobilise, organise and use these resources effectively and efficiently, towards the production of the required goods and services. We have examples of countries who have hardly any natural and physical resources, yet they have achieved tremendous economic growth. Japan is perhaps the most notable example in this regard. On the other hand, we have countries and states which have large natural resources but have not been able to exploit them effectively and they continue to lag behind in economic development. Within India, the economic development of some of the states, notwithstanding their abundant material resources, has been very slow while a few other states with far less natural endowments have achieved remarkable progress. The difference is primarily due to the human factor.

*Inaugural speech made at the National Conference on Human Resources Development and the Seventh Plan, January 19, 1985, New Delhi.

The knowledge, skills, attitudes and the initiative of the people can contribute greatly towards the economic development of region, state or a country. And the human resources development would involve upgrading these qualities of the people. The investment in human resources had directly contributed to the economic development and growth by promoting knowledge and application of science and technology to production processes, by developing innovations and research, by training the workers in different technical skills and by building up the right type of attitudes, values and interests.

Human resources help development

The qualitative aspects of human resources in the country leave much to be desired. On the one hand, there is rapid quantitative addition in population and on the other there is widespread poverty, illiteracy, unemployment and under-employment, low standards of living and low per capita productivity. The socio-economic structures, institutions and organisations have hampered full development of the human resources, have led to unequal distribution of income and wealth and appear to be unsuitable or the rapidly changing socio-economic situations. The heavy burden of population can be mitigated and channelled towards economic development only by appropriate education, training and inculcating proper values and attitudes.

Viewed in this context, I feel that this convention can make valuable contribution to the Seventh Plan, which is about to be launched in a few months time, by discussing and suggesting concrete measures for human resources development. I find that you are going to concentrate on all the three important segments of the economy, namely, Rural Development,

Industry and Infrastructures and Services. Your focus on growth with social justice, technology upgradation, and quality and productivity is in tune with the Seventh Plan objective which, as you are perhaps aware, include food, work and productivity.

Impediments to development

The scale of economic transformation and the speed with which it has to be brought about makes it imperative that maximum utilisation is made of the human resources in all spheres. Widespread poverty, economic stagnation and social backwardness are perhaps a reflection of the multitude of deficiencies in the social and economic structure in the country. I shall mention some of our deficiencies in order to highlight the problem facing us. The techniques of production are often outmoded and the infrastructure facilities inadequate, the supply of capital in relation to the available supply of labour is extremely scarce; the social services like health education are well below the needs; integrated and efficient markets do not exist; there is a dearth of skills and of entrepreneurial and organisational capabilities; the institutional framework is generally ill-adapted to the needs of modern economy; and above all the population is growing rapidly. Considering this scenario, it is obvious that a gigantic effort for the development of human resources is called for to overcome the impediments mentioned earlier and to build a prosperous dynamic society.

Training methodology needs change

Training for the industrial employment is multi-faceted. Craftsmen like fitters, turners, machinist, welders etc., supervisors who can lead the workmen into realms of improved efficiency and productivity the engineers who design equipments and the research scientists and technologists who can do innovative work on existing technologies or new ones need to be trained in their respective fields. The existing institutions like Industries Training Institutes, Polytechnics and Engineering Colleges and Institutes of higher technology have to be geared to the needs of the Seventh Plan and a hard look at their existing methods has to be taken.

Traditional skills such as masonry, pottery, carpentry and smithy which afford bulk of rural employment have to be modernised and training should be devised to suit the local conditions. The massive under-employment in our rural areas can be buckled only by training the rural folk in part or whole-time, self employment schemes.

A large number of para-medical personnel will be needed to implement our Seventh Plan scheme of Medical hygienic and family welfare services. That our phenomenal economic development has been nullified by the growth of population, though obvious, bears repetition. Motivated social workers may be trained in this field so that the problem of poverty may be tackled at the root.

Call for betterment of individua

Economic growth is only one aspect of the human resources development. The fact that economically advanced countries show signs of ecological imbalance, social tensions, alienation of workers and distance between man to man, indicates that in addition to the economic development, the human resources development must be undertaken for the betterment of the individual in the society. The recent emphasis on behavioural aspects and techniques reflects the concern over counter-productive behaviour and decrease in motivation. The psychologists have identified the basic human needs and the satisfaction which the employees get when these needs are met. They all give the highest priority to the sense of fulfilment among human aspirations with the economic advancement, this desire for self-fulfilment rapidly rises. The strategy for the development of human resources should take care of all these.

It is being increasingly recognised that the real difference between one society or organisation and the other depends on the quality of its people, their motivation, satisfaction and productivity. Of late, the satisfaction that comes from the job seems to be dwindling. The employee works in an environment that is more and more de-humanised and soul killing, he works in greater masses and his feeling of alienation and frustration is becoming acute. These days people, particularly the young, seem more interested in choosing a life style before a career or a job. It is essential that the management of organisations meet these problems with skill and understanding not only for the sake of institutional efficiency but also for social health. Organisations would continually need to re-adjust policies and practices to make them consistent with the life styles and changing interests of their members. This explains why the concepts of democratisation of the work organisation and participation of workers in decision making are gaining wider acceptance in today's environment.

Should human resources development, therefore, be considered as a narrow concept covering only the development of technical skills of an individual in purely economic terms or should it be his or her total development, covering all aspects? Should it not attempt to meet the individual's needs for social, cultural and political development?

As this Convention is primarily of the trainers, it appears natural that the focus of the discussion will be on training and development as distinct from the education, the difference often treated as that between acquiring skills and acquiring knowledge. Perhaps, the requirements of education for developing the human resources may be the concern of some other forum but the intimate relationship between the education and the training for developing the individual should not be ignored.

(*Continued on page 32*)

Why this gloom over railways' finances !

Mohammed Jafar

Railways is the largest and basic transport undertaking in the country and also the largest public sector undertaking. But the financial picture of the Railways is one of unrelieved gloom. The author cautions that this should be of major concern to the planners.

Transportation is sine qua non for any scheme of economic development. The Railways play a dominant role in the transportation system by carrying the largest amount of goods and passengers traffic in the country. They are more particularly suitable for carrying bulk commodities over long distances. They are the country's largest public utility undertaking. The capital-at-charge wholly advanced to the Railways by the General Exchequer in 1984-85 has been estimated at Rs. 8,425.76 crore. Therefore, the main brunt of economic activity quite naturally falls on them.

However, if the railway system has to fulfil its basic role of supporting agricultural and industrial activity, internal trade, commerce and an expanding export trade, etc., a fair return on the capital invested is indispensable for its own efficient and economic working.

Tremendous growth

The thirty four years period ending with the financial year 1984-85, witnessed widely fluctuating fortunes of Indian Railways. The five yearly traffic receipts which stood at Rs. 1,439.78 crore at the end of the First Plan, are likely to rise to Rs. 21,162.44 crores at the end of VI Plan in March 1985. The total receipts in the VI Plan are, therefore, to be about 15 times higher than what they were in the First Plan. As against this, the working expenses including miscellaneous expenditure and the provision for depreciation are expected to go up to Rs. 19,413.10 crore from 1,199.53 crore, signifying sixteen times growth during the same period. Thus, it may be inferred that the traffic receipts are not keeping pace with the growth in working expenses resulting into a continued shortfall in railway earnings.

This trend is revealed by a comparative study of the gross traffic receipts and the total working expenses of the successive Five Year Plans also. During the course of the Second Plan the working expenses increased by about 39 per cent against an increase of about 75 per cent in the gross traffic receipts over the corresponding figures of the First Plan. The Third Five Year Plan accounted for an increase of more than 48 per cent in working expenses against an increase of about 55 per cent in the gross traffic receipts of the previous Plan.

The ad hocism in planning proved suicidal for Indian Railways. The growth of about 43 per cent in working expenses outstripped the 34 per cent increase in the gross traffic receipts. The Fourth Plan with an increase of more than 32 per cent in the working expenses against an increase of about 29 per cent in traffic earnings also witnessed this trend. The average increase in the six years from 1974-75 to 1979-80 including the duration of the Fifth Plan was about 89 per cent in working expenses and an increase of about 86 per cent in traffic receipts.

The Sixth Five Year Plan ending in March 1985 is expected to end with a 100 per cent increase in the working expenses against a 113 per cent rise in the total traffic receipts of Indian Railways. Whether this optimism comes true or not, will be known only on the presentation of next budgets. This optimism is

not likely to materialise if we consider the Budget and the Revised Estimates for the year 1983-84 when in February 1984 the Minister of Railways scaled down the assessment of traffic earnings and revised upward the working expenses and anticipated a heavy shortfall in railway earnings, turning a surplus budget into a deficit one.

Overall working results

The Railways' resource generation (net receipts gross of depreciation provision) amounted to Rs. 10,698.71 crores during the period under discussion. To this may be added Rs. 495.89 crores for the net interest on Railways' fund balances. Out of this, an amount of Rs. 5,261.00 crores was contributed to Depreciation Reserve Fund, leaving a surplus of Rs. 5,437.71 crores.

Since the statutory liability of the Railways for the payment of Dividend to General Revenues, including payment to States in lieu of Passenger Fare Tax, etc., amounted to Rs. 5,515.79 crores during the same period, their actual contribution fell short by Rs. 78.08 crores. This was met by temporary borrowings from the General Revenues till 1977-78. However, beginning from 1978-79, the shortfall, as per recommendation of the Railway Convention Committee, 1977, is transferred to Deferred Dividend Liability Account.

The unsatisfactory state of Railway finances, stemming largely from persistent rise in wages and fuel prices, was accompanied by a slow-down in the rate of industrial expansion. The staff costs, claiming more than 60 per cent of the ordinary working expenses, has been continuously rising due to increases in Dearness Allowance, Interim Reliefs recommended by the successive Pay Commissions, enhancement in the rate of running allowances, night duty allowance, city compensatory allowance, and the award of the Railway Labour Tribunal, etc.

Table I given below depicts the index of the effect of increase in the average cost per employee which has a direct bearing on the running of Railways and the percentage increase in average rate realised per passenger and tonne kilometre :

Table I

Increase in Fares, Freight and Lbour Cost (1951-52 to 1982-83)

	(1950-51 = 100)
Average Cost per Employee	858.7
Average Revenue per Passenger Kilometre .	345.9
Average Revenue per net tonne Kilometre	541.1

Thus, while the labour cost increased by about 759 per cent over the period, the unit earnings went up by about 246 per cent to 441 per cent during the same period. These comparative rates of wages and similar increases in other input prices on the one hand, and unit earnings from passengers and goods traffic on the other, give an idea of the wide gap between the increase in the prices charged and the costs of operation of railway services. In fact, the gap between the average earnings from passengers and goods traffic and the mounting costs of inputs including wages, has been continuously widening due to their pursuing the policy of price restraint during inflation under public utility obligations.

Their responsibility

As the largest public utility enterprise, the Railways are charged with the responsibility of providing cheap and efficient transportation service to the nation. They have to open new railway lines in backward areas to facilitate development. They have to charge concessional freight rates for certain essential commodities and mass consumption goods which affect the general cost of living, such as foodgrains, and certain industrial inputs like coal, etc., which have a low unit value.

The freight rate structure has progressively been made cost-oriented to bring it nearer to the estimated cost of operation. Nevertheless, even after substantial increases in freight charges in recent years, narrowing down the gap between the freight rates and the cost of service, a large number of essential commodities have still remained untouched. Certain commodities like coal, foodgrains, iron ore, bamboos, firewood, fruits and vegetables, sugar-cane, molasses and oil cake, etc., which are officially described as 'low-rated', do not all cover their cost of haulage, while some others are uneconomical to be carried beyond certain distances on one or the other gauges or both. Examples of such commodities on Broad Gauge are bone meal, cement sheets, edible oils, groundnut oil, salt, timber logs, manganese ore and cotton raw pressed, etc. On the Metre Gauge these commodities include command refractory bricks, cement sheets, limestone and dolomite, sand, soda ash, sugar, tea, petroleum coke, diesel oil, kerosene oil and liquid fuel, etc.

Furthermore, Railways' social burdens increase due to :

(i) Losses on suburban passenger services particularly in and around the metropolitan cities of Bombay, Calcutta and Madras.

(ii) Uneconomic branch lines, which are not commercially viable due to low traffic density but which can not be closed due to public pressure.

(iii) Concessions granted on social grounds to passengers, e.g., students, blind persons, tubercular patients, etc.

(iv) Free carriage of goods moved on behalf of certain institutions like Red Cross, etc.

(v) Freight concessions in case of exports, and relief measures during natural calamities like droughts and floods, etc.

(vi) The expenditure on Railway Protection Force and the police deployed by State Governments on 'Order' duties.

The financial implication of the various 'social burdens' has been estimated at around Rs. 200 crores per annum, which means that the railways would have suffered losses to the tune of Rs. 6,800 crore during the thirtyfour years period under review. To put it differently, the transfer of resources from the Railways to the general economy should be taken as increased by this amount.

In a sense, the social obligations placed on the Railways have landed them in a financial mess; otherwise, they would have generated a net surplus of about Rs. 7,722 crore after providing for the total deficit of Rs. 78.08 crore. The public utility obligations placed on the Railways not only involve losses to them but also curtail their commercial freedom making their survival difficult as a commercial enterprise.

The Railways are also distinguished as the largest nationalised undertaking employing the largest work force. As a model employer, they have to set an example of good industrial relations by offering larger monetary and non-monetary benefits to their employees, e.g., health and medical services for staff and their families including pensioners, subsidised housing, educational assistance and facilities, holiday homes and canteens, etc.

Dividend to General Revenues

Almost the whole of the capital invested on Indian Railways is treated as loan capital borrowed from General Revenues and the Railways are called upon to pay dividend at a rate which is periodically decided by the Railway Convention Committees of Parliament. The rate of dividend, as reviewed by the Parliamentary Committees in 1949, 1954, 1960, 1965, 1971, 1973, 1977 and 1980, is given in Table II.

Table II

Rates of annual dividend payable to the General Revenues and the share of States in lieu of Tax on Railway passenger fares.

(1950-51 to 1984-85)

Years	Normal Dividend	Additional for States
1950-51 to 1960-61	4.00%	Nil
1961-62 & 1962-63	4.50%	Rs. 12.50 crores
1963-64	4.50%	Rs. 12.50 crores
1964-65		
On Capital invested upto March 31, 1964	4.50%	Rs. 12.50 crores
On Fresh Capital thereafter	5.75%	Nil
1965-66 to 1979-80		
On Capital invested upto March 31, 1964	4.50%	1% of the capital as on 31-3-1964
On subsequent capital	6.00%	Nil
1980-81 to 1984-85		
On capital upto 31-3-80	4.50%	1.5% of the capital as on 31-3-84
On Fresh capital	6.50%	Nil

• Source : Compiled by the author from different sources.

The Railway Convention Committees appointed in 1949 and 1954 covered the period of the First and Second Five Year Plans respectively and recommended an annual dividend at the rate of 4 per cent of the capital-at-charge in the respective years.

The period of the Third Five Year Plan was covered by the Railway Convention Committee of 1960. Besides recommending different rates for different years, the Committee, from 1964-65 introduced a two rates system for the payment of annual dividend to the General Revenues which has been adopted by the successive Convention Committees also. Upto 1960-61 the Union Government under Article 269(1)(d) of the Constitution levied a tax on passenger fares which was abolished on April 1, 1961 in accordance with the recommendations of the Railway Convention Committee, 1960 and to compensate the States for the resultant loss of revenue the Railways agreed to pay an additional amount of Rs. 12.50 crores per year alongwith the normal dividend. This extra payment represented the average of the actual collections during the years 1958-59 and 1959-60.

The Railway Convention Committee appointed by Parliament in 1965 was meant to govern the financial relationship between the Railways and the General Exchequer during the Fourth Plan period, then envisaged to run from 1966-71. As the commencement of the IV Plan was later shifted to 1969-70, it was decided that a fresh Convention Committee should be framed for the revised Fourth Plan period (1969-74). The 1965 Convention Committee thus covered only three interPlan years, viz., 1966-67, 1967-68 and 1968-69.

The Convention Committee suggested that as regards payment in lieu of Passenger Fare Tax, instead of a fixed sum of Rs. 12.50 crore per year as prevailing at that time, an additional 1 per cent on the capital invested upto March 31, 1964 should be paid to the General Revenues. Out of this, a sum of Rs. 16.25 crore should be passed on to the States as payment in lieu of Passenger Fare Tax and the balance utilised to assist the State Governments (in the same proportion as the shares of the Passenger Fare Tax) to provide their portion of the resources required for financing Safety Works such as manned level crossings, over-bridges and under-bridges. Dividend at the rate of 6 per cent per annum was recommended on the subsequent capital borrowed from the General Revenues.

To review the rate of dividend payable to the General Revenues during the Fourth Plan period a Convention Committee was appointed in August 1971. The Committee's final report submitted in April 1973, was approved by Parliament in May, 1973. The recommendations followed the 1965 Convention with some important modifications. The Committee retained the provision for payment of dividend at 5.5 per cent on the capital-at-charge upto

31st March, 1964 (inclusive of 1 per cent to be paid to the States in lieu of Passenger Fare Tax, etc.) and at 6 per cent on the fresh capital invested on the Railways.

However, reliefs (estimated at Rs. 101.72 crore) were given in the payment of dividend by exempting certain unproductive elements of capital, the capital-at-charge of new lines, and a part (25 per cent) of the capital outlay in a year on works-in-progress. The reliefs for the years 1969-70 and 1970-71 were approved by Parliament in May, 1973, with retrospective effect. As the working results of these two years had shown deficits, the Railways had to take loans amounting to Rs. 33.78 crores from the General Revenues for meeting the dividend liability for these two years.

The arrears of relief available for these two years aggregating to Rs. 36.29 crore were utilised in the year 1972-73 (in accordance with the recommendations of the Convention of 1971) to discharge the entire outstanding loan liability in the Revenue Reserve Fund as at the beginning of 1972-73 (Rs. 19.57 crore) and part of the loan liability in respect of Development Fund (Rs. 16.72 crore). During 1971-72 and 1972-73 the dividend obligations could be met in full (due to these reliefs) besides repayment of the instalment due in 1971-72 for the loans taken from the Revenue Reserve Fund earlier. However, a loan of Rs. 99.72 crore from the General Reserves had to be taken in the year 1973-74 to meet the dividend liability in full.

Railway Convention Committee, 1973, the Sixth since Independence, was set up by Parliament in May, 1973 to review, inter alia, the rate of dividend payable to the General Revenues during the Fifth Plan period (1974-79). The Committee did not suggest any change in the payment of dividend but the relief in respect of the capital outlay on works-in-progress was doubled and was made 50 per cent. The Fifth Plan was terminated in 1977-78 and the recommendations of the Convention Committee, 1977, covered only the two inter Plan years, i.e., 1978-79 & 1979-80.

The Railway Convention Committee, 1980, which was set up in October, 1980, for the duration of the VI Plan, have in their 7th Report, recommended the following for the period 1980-84 as an interim measure :—

(i) A rate of 6 per cent on capital invested upto 31st March, 1980 (inclusive of 1.5 per cent on capital invested upto 31-3-64 for payment to States in lieu of Passenger Fare Tax, etc.) and 6.5 per cent on capital invested thereafter.

(ii) Increase in payment to States from 1 per cent to 1.5 per cent on the capital invested upto March 31, 1964, out of which Rs. 23.12 crore may be passed on to the States in lieu of Passenger Fare Tax and the balance utilised to assist the States to meet their share of the cost of safety works.

(iii) Continuance of existing dividend reliefs and other equitable concessions and in addition the entire capital (instead of 50 per cent thereof) on the ore line (Sambalpur-Titagarh) be exempted from payment of dividend subject to usual conditions.

The dividend liability to General Revenues for 1984-85 is estimated at Rs. 490.00 crore involving an increase of Rs. 40 crores over the Revised Estimates for 1983-84 of Rs. 450.00 crore. The increase is mainly due to anticipated increase in capital-at-charge of the Railways during the year.

Contribution

The rate of dividend, as discussed above, is, however, slightly higher than the average borrowing rate of the Government and as such includes an element of contribution. The adoption of a little higher rate of dividend on capital investment on the Railways which includes an element of contribution to General Revenues over and above the bare interest paid by the Government on this capital, has been favoured by successive Convention Committees from 1949 onwards due to historical reasons. Other possible alternatives, such as the Railways paying :—

(i) the bare interest paid by the Government on the capital provided for the Railways plus

(ii) either a share of the profits of the Railways, or alternatively. Income Tax on the profits of the Railways have been considered in the past and rejected. All the Convention Committees since Independence were of the view that there was a distinct advantage in assuring to General Revenues a definite, regular and predictable contribution from the Railways, year after year, leaving the Railways a degree of flexibility in the internal administration of their finances. These twin considerations for which the Railway finances were separated from General Finances in 1924-25 still remain valid, although the quantum of Railways' contribution to General Revenues is now of relatively of less importance in relation to the overall size of the General Budget.

In relation to the magnitude of the capital structure, these modest extra payments to the General Revenues can not be considered to be an undue burden on the Railways. However, considering the progressive increase in the amount payable as dividend, it is necessary to keep down the capital investment in future. Traffic has not built up to the expected levels and further requirements of extra capacity, envisaged in the Seventh Five Year Plan to deal with the question of accessibility and opening of new areas for development, should be met by better utilisation of the existing assets to the extent possible, with capital investment

(Continued on page 34)

How economy performed under Mrs. Indira Gandhi

R. K. Sinha

Here the author surveys briefly, with facts and figures, the economic performance of India during the stewardship of Mrs. Indira Gandhi as Prime Minister of the country and says she steered the Indian economy successfully from crisis to crisis. Failure of public sector, increasing unemployment, black money, smuggling and the mounting corruption were some of her debits, he adds.

THE ASSASSINATION of Mrs. Indira Gandhi on October 31, 1984 marks the end of an eventful epoch. With a brief interval of little less than three years, she dominated the Indian scene for nearly two decades. She was a woman of destiny, widely known for her indomitable courage, determination and unity. Few effective heads of government in democratic countries remained continuously in power for such a long period. An enquiry into the impact she made on the Indian economy and her unfinished task is, therefore, both natural and fruitful and hence, called for.

Broadcasting over All India Radio on August 7, 1966 she summed up the economic tasks of her Government in the following words:

> "We hope within the next ten years to attain a stage of self-generating, self-reliant growth. This means that we shall be able continuously to raise production in farm and factory, to step up exports and improve efficiency and productivity all round without recourse to fresh assistance beyond the next decade. Most of the goods which our economy requires will be produced within the country. Those which we cannot produce or which we find economically advantageous to import will be imported by using foreign exchange earned from larger and growing exports. Thus self-reliance will not mean a narrow concept of self-sufficiency. It will however very clearly mean an all-pervasive spirit of swadeshi in which Indian produced goods, Indian engineered projects, Indian designed machines, Indian invested techniques and scientists would not only dominate the scene but enjoy reputation and regard".

Planning for orderly progress

To fulfill these tasks like her father she was also firm believer in the process of planning. She considered each Five Year Plan as another mile-stone in our long and arduous journey towards a better life for our people. In her signed preface to the Fourth Five Year Plan, the plan which was prepared under her leadership and directoin, she emphatically asserted that "the benefits of development should secure in increasing measure to the common man and the weaker sections of society, so that the forces of production can be fully unleased. A reorientation of our socio-economic institutions in this spirit is accorded a first priority".

TABLE-I

Major Economic Indicators.

		Base/Units.	1950-51	1965-66	1968-69	1976-77	1979-80	1984-85
1		2	3	4	5	6	7	8
A.	National Income Aggregate.	1950-51=100	100	162.0	182.4	240.7	239.9	335.8
	Percapita *	1950-51=100	100	119.9	126.4	139.4	141.1	163.3
B.	Gross Domestic Capital formation.	Rs. crores at current prices.	954	4,390	5,113	16,596	25,419	39,380
	B as % of GNP	%	10.0	18.3	15.5	20.7	23.7	24.1
C.	Gross Domestic Savings.	Rs. crores.	975	3,791	4,697	17,905	24,839	36,670
	C as % of GNP	%	10.3	15.9	14.2	22.4	23.2	22.3
D.	Employment in organised sector.	in Lakh.		161.92	166.25	206.33	223.04	239.55
E.	Agriculture: Net sown area	Ml. hect.	118.8	136.2	137.3	140.2	139.0	142.0
	Net Irrigated area	"	20.9	26.3	29.0	36.2	38.5	41.5
	Fertilizer consumption (NPK)	'000 tns.	69	785	1,761	3,411	5,255	8,680
	Electricity consumption	Mln. KWH	203	1,892	3,466	9,621	13,189	20,500
	Foodgrains production.	Mln. Tns.	55	72.3	94.0	111.2	109.7	150.0
F.	Index of Industrial Production.	All commodities (100) 1970=100	29.7	82.8	90.1	135.2	148.1	183.4
	Mining & Quarrying.	(9.69)	44.7	90.2	96.4	137.8	145.1	219.5
	Manufacturing	(81.08)	30.5	85.3	83.7	131.8	145.5	170.5
	Electricity	(9.23)	10.7	58.2	81.5	162.4	191.8	257.8
G.	External Transactions.							
	Export.	Rs. Crores	601	806	1,358	5,142	6,418	9,743
	Imports.	"	650	1409	1,909	5,074	9,143	15,618
	Trade balance.	"	–49	–603	–551	+68	–2,125	–5,875
	Foreign Exchange Reserve.	"	755	182	394	2,864	5,164	5,498
	Gross external assistance as % GNP	%	–	3.2	3.8	1.6	1.1	1.0
H.	Standard of living.							
	Real Per Capita Private consumption.	In Rs.	410	492	522	535	536	613
	Per capita availability of foodgrains.	Gms/day	395	408	445	437	411	471
	No. of beds	Per lakh persons.	32	62	63	79	74	72
	Literacy.	%	16.7	24.0	24.0	29.5	29.5	36.0

*Some of the figures relates to 1983-84.

She considered planning in India as a charter of orderly progress. By strengthening the economic fabric of the country as a whole, it means a powerful contribution to our goal of national integration. A free market economy can bring economic growth, she used to remain us, but would not bring the kind of equality of opportunity which the vast masses of our 'underprivileged expect'. In all the Five-Year Plans, which were prepared under her leadership, emphasis was laid on the common man, and on the weaker and less privileged sections. She always accepted that planning should result in greater equality in income and wealth; there should be progressive reduction in concentration of income, wealth and economic power and the benefits of development should accrue more and more to the relatively less privileged classes of society (Lok Sabha debate, May 8, 1969).

Table-2

Growth Rate of Major Indicators

1	1950-51 & 1965-66 (2)	1965-66 & 1976-77 (3)	1979-80 & 1984-85 (4)	1965-66 & 1984-85 (5)	1950-51 & 1984-85 (6)
A National Income:					
Aggregate.	3.3	3.7	5.3	3.9	3.6
Per Capita	1.2	1.4	3.0	1.6	1.5
B. Gross Domestic Capital Formation	10.7	12.9	15.9	13.8	11.6
C. Gross Domestic Savings.	9.5	15.2	13.9	14.2	11.3
D. Employment in Organised Sector.	—	2.2	2.4	2.3	—
E. Agriculture:					
Net sown area--	0 9	0 3	0 4	0.2	0.5
Net Irrigated Area--	1.6	2 7	1 6	2.4	2 0
Fertilizer consumption	17.6	14.3	10.3	13.5	15.3
Electricity consumption.	16 0	15.9	9.2	13.3	14.5
Foodgrains production	1.8	4.0	6.6	4.0	3.0
F. Index of Industrial Production	7.6	4.5	5.5	4.5	5.9
Mining & Quarrying.	5.2	3.9	10.9	5.0	5.1
Manufacturing.	7 6	4.1	4.4	3.9	5.5
Electricity.	12 6	9.7	5 5	4.5	5.9
G. External transactions--					
Export.	2.0	18 3	11.0	14.8	8.8
Imports.	5 3	12 4	14 3	14 3	10.1
Foreign Exchange Reserves.	9 7	28.5	1 6	20.8	6.2
H. Standard of Living:					
Real Per Capita Private Consumption Expenditure.	1.2	0.8	2.5	1.2	1.2
Per Capita availability of foodgrains.	0.2	0 6	2.8	0.8	0.5

During her 16 years in office, she led the economy on the ladder of progress. There is no denying the fact that she could not succeed in solving the twin problems of poverty and unemployment; many of the achievements of the economy are real. As seen in Table 1 and Table 2, real per capita income increased at the rate of 1.5 per cent between 1965-66 to 1984-85 as against 1.2 per cent between the period 1950-51 to 1965--66. Gross Domestic savings and Gross Domestic Capital formation as percentage of GNP increased in both the periods, but the increase in gross domestic savings was more than that in gross domestic capital formation in the latter period. However, the annual rate of growth of domestic capital formation in real terms (financial flows) decreased in the period 1965-66 to 1984-85 compared with the earlier period of 1950-51 to 1965-66.

Commanding heights of public sector

The share of public sector in gross domestic capital formation rose tremendously from 27 per cent in 1950-51 to 50 per cent in 1965-66 and declined marginally to 49 per cent in 1982-83. However it still reflects the sustained dominance of public sector in the Indian economy.

The era of Mrs. Gandhi had seen an accelerating pace in all the aspects of Indiain economy. There is no denying the fact that average Indian is certainly better off now than in 1966. His real income to-day is 40 per cent more than 18 years ago. In real terms it has increased from Rs. 119.9 in 1965-66 to 163.3 in 1984-85. The real per capita private consumption has risen from Rs. 492 in 1965-66 to Rs. 613 in 1984-85. Whereas the availability of foodgrains per capita per day has increased from 408 grams to 471 grams during the same period.

Problems in Sixties

When she became the Prime Minister of India, she inherited a major economic crisis. The foodgrains production had just shrunk by 18 per cent, prices were running amuk with an inflation rate of 15 per cent, industry was into a two year recession. Imports were 175 per cent of exports. A majority of our people were being fed by imported foodgrains. The economic crisis were so severe that it resulted in the suspension of launching of the Fourth Five Year Plan for a period of three years.

There was a political backlash. The World Bank failed to fulfil the promise of aid. At the home, she

was not advised correctly by her economic advisers. Perhaps this was the main reason of her permanent distrust of economic advisers. When failed to get correct advice at home and abroad, she opted for an adventurist course which helped her ride the storm. Table 1 and Table 2 depict the performance of Mrs. Gandhi era as compared to the performance of the Indian economy in earlier era on the basis of a number of indicators.

More and more progress

As seen in Table 1 and 2, during the period 1965-66 to 1984-85, foodgrains production increased more than in the period 1950-51 to 1965-66. However, the increase in non-foodgrains production was only marginal. Whereas increases in overall agricultural production including that of foodgrains in the period 1950-51 to 1965-66 came mainly from the expansion of area under cultivation, in the period 1965-66 to 1984-85, they came mainly from the rise in per hectares yields of almost all major crops. The foodgrains production rose from 72.3 million tonnes in 1965-66 to 151.0 million tonnes in 1984-85. The annual average growth rate between 1965-66 and 1984-85 was 4.0 per cent as against 1.8 during 1950-51 to 1965-66. The increase in the annual average growth rate during the latter period has been as a result of the adoption of new agricultural strategy. The net irrigated area has increased from 26.3 million hectares in 1965-66 to 41.5 million hectares in 1984-85. In fact, as evidenced from the two statistical tables, between 1965-66 and 1984-85, the annual rate of increase in the consumption of fertilizers and extension of irrigational facilities has been phenomenal.

So for as performance of industrial sector is concerned, the index of industrial production increased from 82.8 in 1965-66 to 183.4 in 1984-85. However, a comparison of growth rate indicates that it slackened during the latter era. It was less than 5 per cent during 1965-66 to 1984-85 as compared to 7.6 per cent during 1950-51 to 1965-66. In both these periods, the industry groups such as chemical and chemical products, petroleum products and non-electrical machinery showed higher growth rates during both the periods than the average growth of all the industries.

On the external transactions front, the trade deficit has gone up by about 9 times of the 1965-66 deficit as percentage of GNP has slightly declined. The foreign exchange reserve (excluding gold and SDRs) which has declined from Rs. 755 crore in 1951-52 to Rs. 182 crore in 1965-66 has increased considerably during Mrs. Gandhi's era. It was Rs. 5,498 crore during 1983-84.

Nationalisation of major banks

One of the important economic events of Mrs. Gandhi era is the nationalisation of major banks. Bank branches have grown significantly in number and have spread into rural and earlier unbanked areas. Thus while in 1968 only bout 22 per cent of the bank branches were in rural areas, in just two years after nationalisation their share has risen to 36 per cent. By March 1984, 56 per cent of the total bank branches were in rural India. Another significant factor is the deployment of bank credit. The priority sector's share in bank credit was a meagre 2 per cent in 1968-69, by 1982-83 this share has increased impressively to almost 38 per cent.

For all the times to come her 20-Point Economic Programme launched in June, 1975 and revised 20-Point Programme launched in January 1982 will be considered as the Magna Carta for the amelioration of the condition of the poor and the unemployed.

Ever since she became the Prime Minister in 1966 till her tragic death in October 1984, she steered the Indian economy successfully from crisis to crisis. The aftermath of the Bangladesh War, poor harvest in 1972-73, increase in oil prices, J. P. movement, nationwide railway strike, Assam agitation, Punjab episode—to name a few. In such a situation, if she failed to achieve some of the tasks she set in her broadcast quoted earlier, the causes could be elsewhere. During her life time, what hit the headlines of newspapers were the crisis and not her achievements.

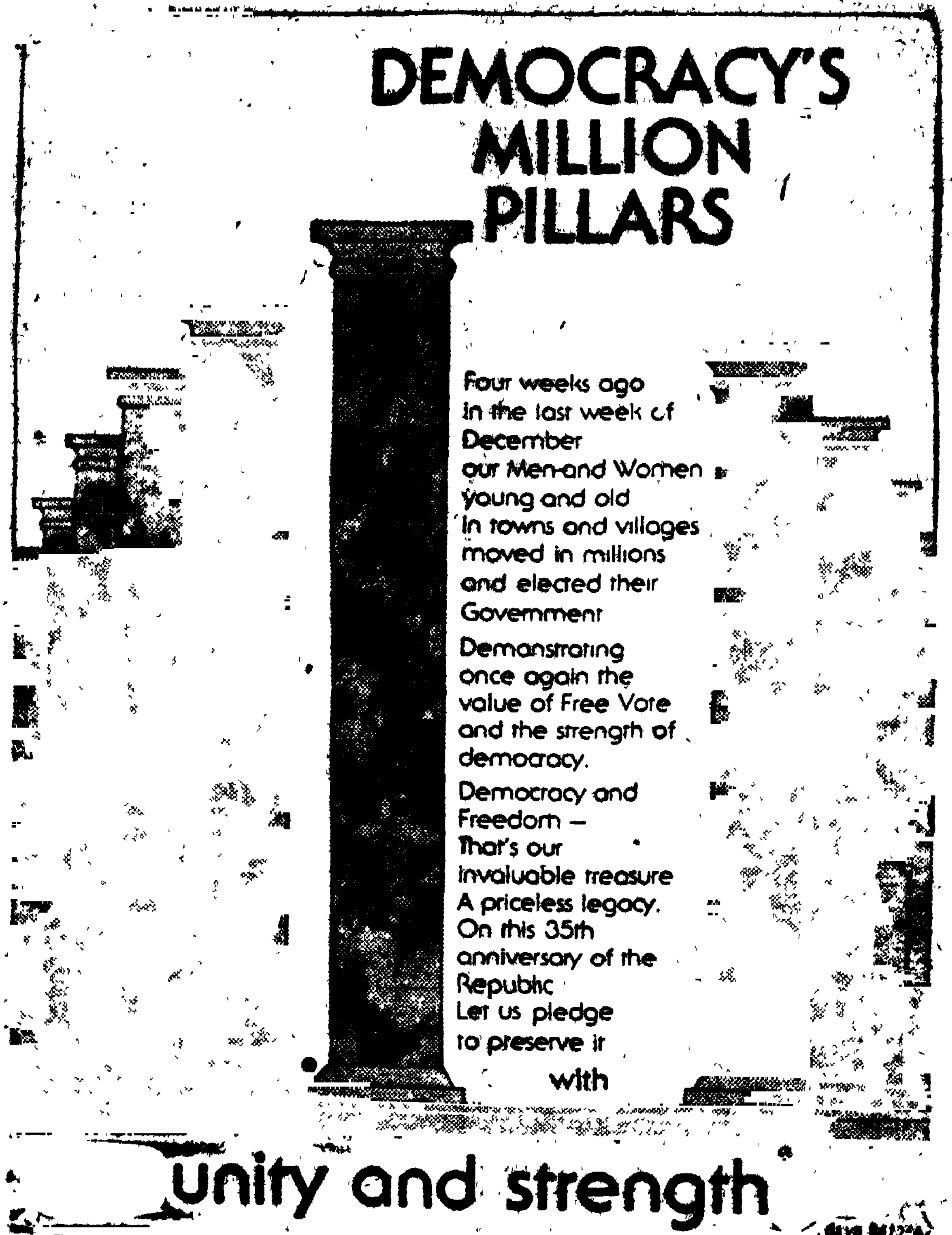
Failures

There is no denying the fact that successes and failures are the part of one's own life be it of individual or of a nation. There is no doubt that the list of failures of Mrs. Gandhi's era on economic front is not blank. In this list one may include failure of public sector, increasing unemployment, black money, smuggling and mounting corruption. If there were failures, there were also achievements. No one can say that her performance on economic front was a gold-winning one. At the same time, she was not a non-performer as the nation has not dropped out of the race. Mrs. Gandhi has left the economy with enough wind to keep it running, in fact, to keep up pace in the period ahead. To quote her last voice, "Every drop of my blood, I am sure, will contribute to growth of the nation".

Promises to carry her unfinished tasks

Like her, the new Prime Minister has also promised in the Election manifesto of his Party to the speedy removal of poverty, development of agriculture and industry, expansion and modernisation of infrastructure, productive employment for all citizens, adequate provision of health and educational facilities, special programmes for scheduled castes, scheduled tribes and other disadvantaged sections of the society and balanced regional development.

People have responded to the New Prime Minister by giving him an overwhelming majority. The Prime Minister has also assured the people that he will successfully carry out the unfinished task of Mrs. Gandhi. One hopes he will carry forward the nation on the path of prosperity and fulfil the unfinished task of Mrs. Gandhi. □


DEMOCRACY'S MILLION PILLARS
Four weeks ago in the last week of December our Men and Women young and old in towns and villages moved in millions and elected their Government
Demonstrating once again the value of Free Vote and the strength of democracy.
Democracy and Freedom — That's our invaluable treasure A priceless legacy.
On this 35th anniversary of the Republic
Let us pledge to preserve it
with
unity and strength

Urban settlement in Seventh Plan

Ramesh Chandra

The population explosion in India during the last five decades has generated high density urban settlements and also led to the formation of slums. The 7th Five Year Plan lays emphasis on the development of human settlements in a balanced manner. Here the author analyses problem areas encountered in the planning of balanced urban settlements and suggests coordinated projects for successful implementation.

THE GROWTH OF urban human settlements in the world which has taken place during the last decade and which is projected to take place till the turn of the century, i.e. the year 2000 A.D. is phenomenal.

While the world population is estimated to increase by 1500 million, more than three-quarters of the increase i.e. 1200 million people will be added to urban human settlements in more than 15 years. It has been estimated that in the developing countries, the percentage of the population living in urban settlements will rise from 28 per cent (1975) to 44 per cent.

In numbers this signifies a growth from 830 million to 2150 million. In Africa, the urban settlements are expected to double their size from 160 million to 350 million. In Latin America 75 per cent of the population (455 million) would be living in urban settlements by the year 2000.

In 1950 only two cities in the developing countries had over five million inhabitants. In 1980 there were 26 cities with a population of five million or more in the world of which 19 were in developing countries. By 2000 A.D., if the present trend continues, 58 cities of the world will have a population of five million or more, 44 of which will be in developing countries. It has been estimated that the population of slum and squatter settlements in urban settlemens areas is increasing at twice the rates of growth of population of the cities. This is four times faster than the world population growth.

Spurt in urban population

In our country, total population has grown from 279 million in 1931 to 684 million in 1981. The annual growth rate which was 2.16 per cent in 1951 to 1961 increased to 2.48 per cent in 1961—71, but declined to 2.46 per cent in 1971—81. In terms of growth of urbanised human settlements, India is by no means a highly urbanised country.

According to 1971 census, about 20 per cent of the total population resides in the urban areas and the remaining 80 per cent lives in rural settlements. This proportion has further increased to about 24 per cent according to the 1981 census. However, in absolute numbers, the total urban population living in urban settlements comes to 156 million which is large enough by any standards. There are 12 cities of million-plus population and more than 200 cities of population between one lakh and 10 lakhs in the country.

The results of lack of attention to the planning of human settlements are becoming obvious day by day. The unplanned and un-regulated growth of human settlements is leading to the springing up of large slums and concentration of squatter settlements. This is creating a rural-urban divide resulting in inter-personal differences and inter-regional imbalances. This is also leading to environmental degradation, depletion of resources, breaking down of services and accentuation

of the problem of urban renewal and environmental pollution.

There is a close connection between the unplanned human settlements and the problem of poverty. Poverty is the biggest problem of the Third World. Approximately, two-third of the population of the developing countries i.e. about 1.2 billion people live below the poverty line and of these 700 million could be put under the category of destitutes. Lack of proper housing is an important dimension of poverty. Approximately, one-fourth of the world's population does not have adequate shelter and live in extremely insanitary and unhygienic conditions. More than 50,000 people die of malnutrition and disease every day. One hundred million people have no shelter and sleep on streets, pavements and open spaces.

From this background emerges the supreme necessity for a basic policy framework of human settlements. The policy may undergo change due to local variations.

A "Settlement Pattern" has to be evolved with accent on proper land use, growth with social justice, employment opportunities and curbing of migration to high density metropolitan areas.

Planning with eco-balance

The planning of human settlements raise certain issues the solution of which requires Research and Development efforts on continuing basis. Pattern of human settlements has to be such which is comparatively free from natural hazards. A large part of the world faces the risk of one natural hazard or the other. It may be floods, storms or earthquakes.

A satisfactory human settlement policy must take into account these natural hazards and evolve a strategy of building up protection measures against these natural hazards. It may be worthwhile to attempt the formation of a National Plan of Human Settlements mapping the entire land mass of the country in the various regions of optimal growth or density of population. The need for conservation of scarce resources including energy while planning human settlemets needs no emphasis.

The problems faced in planning of human settlements particularly in developing countries are lack of cohesion and linkages of the plan, inadequacies of outlays and the lack of effective machinery.

Emphasis in Seventh Plan

It is a matter of satisfaction that the approach to the Seventh Five Year Plan in India has placed emphasis on the development of human settlements. It has emphasised that the need for shelter or housing has emerged as one of the most important felt needs of the country, perhaps next only to food. With regard to the provision of shelter which is an important dimension of human settlements, the approach of the Seventh Five Year Plan says : "If a further deterioration in housing shortage is to be prevented and shelter is to be provided to the net addition to population, the number of houses required to be built would be at least 17 million during the Seventh Five Year Plan period".

This is a colossal figure and nothing short of a major national programme of housing development can hope to tackle it. The approach of the Seventh Plan also highlights another important dimension of human settlement that of urban growth. It is recognised that provision of shelter cannot be developed significantly without infrastructure, primarily consisting of electrification, water supply, local roads, sewerage and garbage collection etc. In the Seventh Plan it has been envisaged that the process of urban development will be spread out over 12 metropolitan cities of million plus population, more than 200 cities of population between one million and one lakh, towns with population between 1,00,000 and 5,000 and small rural urban centres.

The national and central financial institutions and banking structures should be involved more actively in the process of lending funds for the growth of human settlements. With a view to ensuring a smooth flow of adequate finances there is a need for a central financing organisation at national level for extending assistance for projects and schemes for settlements, particularly in urban areas.

The year 1987 has been declared as the International Year of Shelter for Homeless by the United Nations Organisation. The task of ensuring proper growth of human settlements in developing countries is a colossal one. This necessitates development of a system of International cooperation and understanding.

The involvement of international organisations with regional and sub-regional units will quicken the pace of implementation of the programme.

The need for international cooperation and exchange of expert experience and research findings will be felt more in the areas of developing low-cost sanitation cheaper and more effective system of sewerage and the use of substitute material and energy saving. This is not a problem of developing a few pockets or islands in selected countries; this is linked with the far wider problem of the growth and sustenance of the civilization itself. □

Solar cooker for rural areas

SOLAR COOKER DESIGNED by Central Arid Zone Research Institute, Jodhpur comprises four square and four triangular plane glass reflectors and insulated semi-cylindrical box at the back made of alluminium sheet and wood on an angle from stand designed for adjusting the equipments towards the sun. A cradle like cooking platform made in the oven helps in keeping the vessel containing the food horizontal. All types of food can be cooked within an hour. It is useful to the people in the rural areas. □

Income inequality and socialism

Dr. Pratap Narayan Singh

Non-implementation of professed socialistic pattern economy of India has widened, among others, inequality of income of the rural and urban people and more explicitly between the industrial sector and agricultural sector. To give effect to the policy of socialistic pattern of society, the author calls for a uniform national policy for ceiling on income, putting an end to inter-sectoral and intra-sectoral biases with respect to property and income and a time-bound programme for speedy removal of unemployment.

FOLLOWING INDEPENDENCE, specially since the Second Five Year Plan the Government of India decided to establish a socialistic pattern of society wherein the income inequality will be reduced to a minimum; the masses will be provided a minimum source of livelihood; and there will be no much concentration of wealth in private hands. The Sixth Plan document says, "The objective of social justice as articulated in the Plans has two major dimensions. The first dimension is an improvement in the living standards of the poorest groups in society and the second is a reduction in inequality in asset distribution". (Sixth Five Year Plan, p. 7). Thus, progressive reduction in inequality of income is a pre-requisite for the establishment of a socialistic pattern of society.

The gap in policy !

But along with other lacunas in the practical application of this principle, there is a wide gap in the policy itself with respect to rural and urban India and more explicitly between the industrial sector and the agricultural sector. Besides, there is intra-sectoral bias in favour of the rich in both the sectors. A wide gap exists with respect to ownership of property in industrial sector and agricultural sector, with respect to right to property for rural masses and other urban higher income-group (non-industrial houses) families and also with respect to urban, industrial labour and agricultural labour and so with respect to organised and unorganised labour. While the income in the rural sector has been restricted to a great extent there is no such limit for the industrial sector. In the rural sector we have introduced land ceiling laws which have been implemented by all the States except Nagaland, Meghalaya, Arunachal Pradesh and Mizoram where land is generally held by the community. According to this enactment, a land-holder is not allowed to hold land of category one exceeding 10 to 18 acres (depending on the suitability of different States). If we value it in terms of money it implies that a land-holder cannot own property exceeding Rs. 5,00,000 to Rs. 9,00,000 (such valuation is based on the assumption that one acre of category-one land is worth Rs. 50,000 in terms of market value prevailing in rural Bihar). Besides, a land holder for the purpose of land ceiling laws stands for husband, wife and three minor children. If we take this into account, an individual in the agricultural sector cannot hold property worth exceeding Rs. 1 lakh to Rs. 1,45,000. This Act has been implemented since August 1970 as a national guideline. The figure will be further reduced if we take into account the further rise in number of children in the family since the enactment of the laws. From this, it is clear that there has been sufficient reduction in the concentration of wealth in the rural sector. The corresponding limit in income is roughly Rs. 4,000 per annum. There is talk of inequality of income in the rural sector only.

Non-implementation of urban ceiling laws

But we find that the same has not been so effectively implemented in the urban and the industrial sector as well, although an urban ceiling law has been enacted. It restricts users of vacant land but does not apply to big houses/buildings, business and industrial

establishments. The urban population can be divided in following categories for the sake of analysis pertaining to wealth and income opportunities:

(a) Private big industrial houses;
(b) Non-industrial urban population owning property such as big buildings, business establishment; etc.
(c) Industrial organised labour; and
(d) Urban poor/unorganised urban labour.

So far as the first category of the population is concerned there is no ceiling either on income or property. The Industrial Policy Resolution of 1956 followed by further Legislative enactments simply restricts the establishment of industrial units in private hands in specific sectors.

As a result of the above said policy an industrialist can hold property worth several crores even worth thousand crores of rupees. They divide their share in the name of different members of the family. The family owns in the guise of a firm or industrial unit. There is no corresponding limit on income of the industrialists.

Now, let us come to the second category, namely, non-industrial urban property owning class. The people in urban sector may own big houses and other business establishments and earn a lot in terms of house-rent, profit etc. No such facility is available to a farmer.

Similarly, in the category-third, the urban organised labour is much more better of than their unorganised rural counterpart. Only the fourth category of people, namely, urban poor are deprived of such privileges which is due to intra-sectoral bias.

Urban rich allowed more income

Thus, it is clear that an industrialist can hold much more in comparison to an agriculturalist Urban population (except urban poor) is allowed more sources of income than the rural population, giving rise to enormous gap in income limits.

There is no objection to having ceiling on land holdings in rural areas. But there should be an appropriate counterpart of this policy for the industrial sector also so that we may have a uniform policy. This is the reason why the people are suggesting a ceiling on income for individuals in general.

The income ceiling in urban sector should be a bit higher than that of the rural sector in view of the higher cost of living in the former. But the difference in cost of living does not justify the existing gap. The so called urban ceiling Act has failed to bring about the desired results.

Bridging the incomes gap

Therefore, we need a drastic change in the policy to have control over the widening gap between the rich and the poor, between the rural and the urban population, between the agriculturists and the industrialists and organised and unorganised labour and so on.

Here, one question may be raised i.e., the productivity will fall if ceiling is imposed on industrial income. But this can easily be solved by establishment of efficient big industrial units in public and co-operative sectors only. Besides, only small units should be established in private hands in place of big ones. If we are really interested in the establishment of a socialistic pattern of society, we will have to remove the sectoral bias and intra-sectoral bias with respect to income and property and improve the working efficiency of public sector undertakings.

Need for a uniform policy

The problem of inequality of income should be studied on a wider perspective so that we may be able to establish a socialistic pattern of society in India in the real sense of the term. This will not be possible unless we remove political prejudice and have a uniform policy. It is due to the fact that the agricultural sector as a whole, is unorganised. Thus, it is clear that we will have to implement the policy of removal of inequality of income and property uniformly and vigorously for all the sectors. If we allow concession to one sector, the other sectors should not be discriminated. In absence of a uniform policy with respect to the above facts, India will neither get benefits of socialism nor of capitalism.

There is another side of the picture also. How far we have been able to provide a minimum source of livelihood to our population in general and rural/urban poor population in particular. The answer is not very satisfactory.

In view of the above facts, our suggestions are the following for the establishment of the socialistic pattern of society in India in the real sense of the term:

(1) Big industrial units be established in public and co-operative sectors only.
(2) Continuous evaluation of the performance of public sector undertakings be carried out.
(3) Corruption in management of public undertakings should be completely eradicated.
(4) Small-scale industrial units be established in large number in private hands.
(5) Uniform national policy for ceiling on income be adopted.
(6) The time-bound programme for speedy removal of unemployment be established by creating employment opportunities for all vigorously.
(7) Inter-sectoral and intra-sectoral biases with respect to property and income should be removed.
(8) There should be progressive re-distribution of urban property in favour of the poor.
(9) The poor sections in urban and rural sectors should be provided with minimum requirements, viz. source of livelihood and shelter. □

Educating farmers through broadcasts

Dr. A.W. Sabos

All India Radio is planning to extend its popular farm school on the air programme to all stations for countrywide coverage. The programme has aroused a considerable interest among the rural listeners as also among the scientists and field officers of the State agriculture departments.

All India Radio has been always alive to its obligations to the rural people, particularly farmers, from the very beginning. However, in 1966 specialised Farm and Home Units were opened up at 10 AIR Stations. Encouraged by the success of this programme, more Units were opened up and now there are 64 farm and Home Units at different AIR Stations. In the days to come, we shall have more of such Units throughout the country.

On an average, each Farm and Home Unit produces a programme of 1 to 1½ hours every day in all the three transmissions consisting of important agricultural hints for 5 to 10 minutes in early morning, a programme for rural women in the afternoon, and a Programme of about 45 minutes to 1 hour in the evening covering various rural subjects and hardcore agriculture. The popularity of these programmes can be judged from the fact that the Farm and Home Units, on an average, receive 800—900 letters from the listeners per month, there are huge gathering of farmers at the Farm and Home Anniversary Celebrations by AIR Stations. Several studies conducted by the agricultural universities, ICAR Institutes, Indian Institute of Mass Communication, etc. indicate 'Radio' as the most important mass media source of information for the farmers.

Besides covering all those subjects and items which concern the life of rural people, AIR has been skilfully using various formats of broadcasting for making the Programmes interesting and acceptable for actual translation in the field. Among these variou innovations of broadcasting, 'Farm School on the AIR' programme has become most popular. This was first introduced in 1973 at two AIR Stations, viz Trichur and Vijayawada. The results of these earlier experiments were very encouraging as revealed by the evaluation studies carried out by the Audience Research Unit of the All India Radio. In subsequen years, the Farm and Home Units at other AIR Stations introduced this programme and at present, it i being broadcast by 31 AIR Stations.

Programme feature

The important features of this programme ar given below :

(i) After a careful study of the topography, soi conditions, climate and cropping pattern other agro-physical factors, a relevant topi is selected keeping in view the needs o the farmers in the particular region which forms the programme zone of the AI Station. The selection of the topic is don by a committee consisting of farm broad caster, agricultural scientists, Agricultura Extension Officers, and the representative of farmers.

(ii) The syllabus for the course is designed care fully by the same committee which select the topic. All the aspects related to th selected topic are thoroughly discussed an a series of lessons are devised. Th

committee also suggests for each lesson an appropriate expert who prepares the technical material for his lesson. After all such lessons are prepared, the committee finalises the sequence of broadcast of lessons ensuring that the topic has been well taken care of in all its aspects.

(iii) Suitable advance publicity is given through radio announcements, local newspapers, and also with the help of field staff of the Department of Agriculture. Many a time, leaflets and circulars are also profusely distributed among the potential listeners. In order to encourage regular listening, the listeners are invited to register themselves for the course. Registration is of course free and anybody can register himself by sending his personal details in a simple proforma. It will be interesting to know that during the years 1-1-81 to 1-1-84, the total number of registered listeners for different AIR Stations for this programme was 1,08,296. The number of actual listeners must be many times more.

(iv) The lessons in this programme are presented on the fixed dates of the week and also at fixed timings. The listeners are already informed of the schedule of broadcast of lessons, so that they don't miss any lesson. Although no particular format or method of presentation of the lesson has been prescribed, the experience has shown that lecture-cum-discussion followed by question and answers is best suited to this type of programme. At the end of each lesson, the expert asks three simple questions arising out of the contents of the lesson and the listeners are requested to send the answers to these questions on a postcard to the AIR Station. This exercise gives a fair idea about the position of listening and the lesson understanding capacity. This helps in making desirable changes in the presentation of subsequent lessons.

(v) To create a sense of purpose and to fulfil the natural desire of recognition and achievement, the evaluation of the School Programme is done through organising written tests at different places in the programme zone of the AIR Station. Advance publicity is given on mike about the schedule of the written tests at selected villages and registered listeners are requested to appear for the written test. The experts set a simple question paper and also help in the evaluation. Answer books, pencils, etc. are provided by the AIR Station and the village schools provide a place for conducting the test.

(vi) After the written tests are over, the AIR Station holds a Prize Distribution Ceremony either at the Station itself or at any other place in the programme zone. All concerned Departments of the State Government, research institutes, colleges, etc. are involved in this function. Prizes are distributed to those farmers who have done well in the written test and certificates are awarded to all those registered farmers. Various Government organisations, banks, etc, have come forward for giving prizes and during 1981-84, a total number of 1698 prizes were awarded to the winners of this programme at different AIR Stations. The nature of prizes consisted of ploughs, plant protection equipment, irrigation pump sets, fertilizer bags, seeds, storage bins, transistors, wall clocks, thermos flasks, gift cheques, cash, cross-bred cows, pressure cookers and so many other articles.

It is now proposed to organise the study tour of the winner farmers to various places of agricultural interest in the country instead of giving them prizes. The initiative in this direction has already been taken by AIR Station at Trichur.

(vii) One of the limitations of radio programmes is that it has no reference value. Once the programme is over, there is no way for the listeners to refer back to it for information and for revision. On account of this, at the end of the course, the entire material is published in the form of a book and distributed to the registered listeners. This is done with the help of State Departments, agricultural universities, agro-industries, banks, and other rural development agencies.

From 1973 to 1981, 31 AIR Stations conducted 338 courses and covered 261 subjects registering more than 1,40,000 farmers out of which more than 40,000 took the written test. Between 1981 and 1984, 28 AIR Stations conducted 200 courses covering 193 subjects registering more than 1,00,000 farmers out of which more than 52,000 took part in the written test. The Farm School on the Air programme has not concentrated its attention to the subjects of crop and animal production alone, but it has covered a variety of subjects like gobar gas technology, agricultural marketing and management, land reclamation, sericulture, apiculture, nutrition, etc.

The Farm School on the Air programme has aroused lot of interest among the rural listeners and also among the scientists and field officers of the State Departments. On account of this, AIR is planning to have this programme from almost all AIR Stations wherever it is feasible to undertake such a programme.

TOWARDS SOCIAL REVOLUTION
a Case for Economic Democracy - VASANT SATHE

A Serialisation 13

A policy for technology

MODERN INDUSTRIAL PRODUCTION requires the use of the latest technology not only to achieve efficiency but also to attain the necessary scale of production. Knowledge has never known any territorial barriers, and with modern media facilities, the availability of the latest techniques is more or less simultaneous in many parts of the world. Developing countries might not be in a position to invest heavily in research and development but they have the expertise to be able to absorb and adapt the technologies developed in the advanced countries. While trying to adopt the latest technology, the scientists and technologists of the developing countries would acquire greater skills and expertise as well as knowledge which could help them, in turn, to do their own R&D work and improve upon the technologies acquired. Indigenisation and self-reliance should never mean prevention of the inflow of new knowledge and technology. Here, it would be relevant to recall the remarks of Raul Prebisch in his statement to the Seventh Session of the Economic Commission for Latin America : The deep-seated ill does not, in fact, lie in the technology itself, but in the social structure into which it is introduced: a structure which permits highly inequitable appropriation of the fruits of the increasing productivity which the technology brings in its train. These fruits of technical progress represent an ever-growing capital accumulation potential. And I am persuaded that if this potential were utilised as far as possible in economic and social investments, we should make steady progress towards the elimination of critical poverty and other evils. It would be, in reality, the starting point for a transformation of the system in a profoundly social sense.

The question that immediately arises is whether a developing country should allow outsiders to bring in their capital and technology, utilise the labour—both technical and non-technical—of the developing country and take away the surplus generated from their activity. In other words, should colonial exploitation continue in the form of economic colonialism ? The answer obviously will be an emphatic 'no'. One solution in such a case could be to lay down the condition that anyone wanting to bring in capital as well as technology to a developing country would be allowed to do so but would not be permitted to take out any part of the surplus generated by industrial activity within the country. However, if by utilisation of less expensive labour and available raw materials, the outside investor can produce goods at a competitive rate and export them so as to earn a net gain in terms of the value added for the country, then the investor should be allowed to get a fair share of that value-added income. This would encourage investors to come to the developing countries, bring in the latest technologies, create employment for the people in these countries, generate surplus capital formation within the country and also earn substantial income from outside. No investor from anywhere would ever come for the sake of charity, and hence, to allow the investor to get a fair return from the net value added by way of export would be fair, both to the investor as well as to the country concerned.

In terms of international phenomena (such as global recession and protectionist policies) also, it is in the interests of the developed countries to invest in the developing countries, improve the living conditions and the purchasing power of the people in these countries and thereby create larger economic markets for the technologies and the goods produced in the developed countries. It has been seen that the growth of restricted vertical affluent markets reaches a point of saturation and benefits only a few, ultimately causing unemployment even in the developed countries. One of the side effects of such a vertical growth of the centre is the heavy investment made in the armament industry. The wasteful diversion of resources and the likely catastrophic consequences are too well-known to be reiterated,

Coming to the industrial economics of a developing country, the growth of industrial society should be freely allowed, provided the organised sector conforms to the participato.y econometric model of the triumvir or the trimurti of the main productive forces described earlier. After this elementary requi.ement has been fulfilled the entrepreneur and his other partners, both finance and labour, must be info.med that any investment from outside would be allowed only if it conforms to the aforestated conditions.

If full and free growth is desired, the constraints imposed by the state should be minimum or nil. If people are allowed to invest freely even in their own interests, they would not choose areas where there is no scope for competition. As long as these investors bring in their own capital, they should be left totally free to invest in areas of their choice without any restrictions whatsoever. It is only when an entrepreneur asks for capital from public financing institutions that these institutions would be legitimately entitled to state that they would lend finance for productive activity in areas according to the national priorities.

Let us take up the electronic industry, with particular reference to the consumer electronics, as an example. If people were allowed to invest in the labour-intensive electronic industry on the principle that they would be allowed to take out only about 20 per cent to 25 per cent from the value added on the condition that they would have to bring their own capital, and, being a non-priority sector, capital f om public finance would not be available or would be available on a very low priority, the net result would be that the electronic industry would grow at a much faster pace using the qualified technical people within the country, generating larger employment and earning substantial foreign exchange. Here is an industry which has no locational constraints, is pollution-free, and requires the least consumption of power and compa atively little capital. Table 5.1 shows the employment potential of selective industrial groups.

Table 5 1—Employment potential of selective industrial group

Industry group	Fixed assets requirements for creating an extra job	Number of jobs created with Rs. 1 crore of investment
Chemicals and petrochemicals	304,900	33
Power generation and distribution	286,487	35
Non-ferrous metal products	200,837	49
Ferrous products	150,331	66
Sugar	142,827	70
Rubber products	131,022	76
Automobiles and bicycles	109,443	91
Pulp, paper and paper products	96,865	103
Machinery manufacturing	76,615	126
Textiles	74,900	133
[illegible]	40,942	246
[illegible]	32,120	312

It is not always desirable to give examples of other countries, because conditions and circumstances differ. All the same, it would be interesting to know about a country comparable in many ways, namely, the Republic of Korea (or South Korea), which acquired statehood in 1948 and which established an electronic Commission in the same year as India did, i.e., 1970. South Korea's industrial base then was more or less the same as that in India. India could, in fact, be said to have better qualified technologically as it possesses the world's third largest technical manpower. Other things being equal, the Republic of Korea by adopting a rational policy, allowed the growth of electronic industry at a much faster rate and, in the process, developed indigenous content as well as earned much more foreign exchange compared to outside investment. Table 5.2 shows the rate of growth which the Republic of Korea achieved in less than a decade as compared with the growth of the electronic industry during the same period in India.

Unfortunately, some people consider the electronic industry a non-p.iority industry. This is wrong because electronics is now being used in practically every field of scientific growth including space technology, health, agriculture, education, communication, office management and in practically every field of industrial activity.

Table 5.2—Comparison of production and export of electronic goods in respect of India and South Korea (in million U.S. dollars

Country	1971 Production	1971 Exports	1976 Production	1976 Exports	1981 Production	1981 Exports
South Korea	138.00	88.00	1422.00	1037.00	3791.00	2218.00
India	220.00	7.00 (1972-73)	460.00 (1975)	24.00 (1975)	995.00 (1975)	53.00 (1980)

But even accepting, for the sake of argument, that elect.onics is a non-priority industry, if by investing Rs. 100 crore, you generate a capacity of earning about Rs. 25 crores per year by export, apart from creating employment and capital gene.ation within the country, can this be considered an economically nonviable proposition? In addition, by producing these items, the country would be able to prevent large-scale smuggling which, in spite of the government's best efforts to curb, is taking place regularly, draining the country's scarce foreign exchange resources.

Thus, from every point of view, the growth of this industry would have been desirable but some of the policy-makers, in the name of self-reliance and other priorities, refuse to allow the latest technology to come in, obstruct the growth of this industry and insist on persisting with obsolete technology such as the black-and-white transmission in the field of television. These persons even made artificial and false projections only to justify the setting up of a black-and-white glass shell plant in the public sector to produce one million black-and-white glass shells and picture tubes per year.

As events have shown and proved beyond all doubt, one really cannot stop a better and a more attractive technology from coming in. Although the policy-makers tried deliberately to keep the price of a colour TV set much higher than that of a black-and-white set, the result is there for everyone to see. The demand for black-and-white sets has fallen and that for colour sets is on the increase.

This is true also of the growth of the media electronics. Whereas in terms of modern development, low-power transmission systems on TV covering a radius of 25-30 km. can be produced, and, if produced in India, would cost approximately Rs. 5 lakh, and whose operation has proved to be successful in the remotest areas of the north-eastern regions, Sikkim, the Andamans, etc., it required a tremendous effort to persuade some people to agree to make these low-power transmitters within the country and allow every district or parliamentary constituency to have low-power transmission so that the whole country is covered by the most powerful, useful, educative and entertaining media, the television. The other aspect of technology which has gained importance is the availability of wide-screen projections and video cassettes or discs. The cost of these two devices, if produced economically, would together be less than Rs. 10,000 per set, which any community collectively can easily afford. Consequently, audio-visual education and entertainment can be taken to the very doorstep of the people in the villages and to the remotest part of our country.

It is well known that even today cinema has not been able to reach the villages, and the whole country has less than 10,000 cinema houses, concentrated mostly in urban areas. This is an insignificant number in comparison with the Soviet Union which, with about one-third the population of India, has over 100,000 cinema houses. Thus, here is the modern electronic medium in the form of a video cassette player and a wide-screen projector available to reach the villages and to communicate with our people who have been brought up in the audio-visual tradition and to whom such a demonstrable communication system would be of great educative importance, both for agricultural activities as well as for other purposes. This very facility could be used in the schools for presenting educative programmes produced by experts and could be linked to the low-power transmitters and used as an ordinary TV set to receive the programmes telecast from the national or regional stations at no extra cost of transmission.

The major reason for stifling the growth in the electronic sector, which has clear advantages that cannot be rationally controverted, is the existing pattern of administrative constraints. We tend to stick to some false notions and unfounded prejudices and then put so many obstructions that growth becomes practically impossible.

Then there is the high-sounding controversy about the public sector and the private sector. The concept of the public sector, as envisaged by Jawaharlal Nehru, was that public investment should be made in core sectors where the infrastructure had to be built, and because of its long gestation period and low profitability, private investment would not be possible. Hence, public money had to be invested in basic industries such as steel, power, fertilizers, cement, coal, oil and natural gas, so as to provide what is known as the infrastructure for producing goods of consumption in the private sector.

In fact, apart from the distinction that the so-called public sector utilises public finance for infrastructure industries and the so-called private sector also utilises public finance for consumer industries, there is no other difference between the two.

However, one other distinguishing feature which eventually developed with regard to the two sectors was that whereas the so-called public sector was manned and controlled mostly by the bureaucratic administrative cadres, the private sector continued to be in the hands of people not connected with the government. In the public sector, the bureaucracy took with it the bureaucratic culture, namely, restricing the hours of work, having a huge establishment which increased the overhead costs, creating multifarious decision-making points so that no one person could be held accountable and which also meant that no decision could be taken in time (thus causing time overrun), increasing the costs of the project, delaying commencement of production, and even when started, not acquiring capacity utilisation, and even if capacity utilisation was achieved, the profit as a ratio to investment was far too low, only because of the high percentage of the cost of the variables.

Thus, although many inhibiting and inefficient features were inducted into the so-called public sector, this sector got identified as a government sector and therefore became a 'holy cow' which could not be criticised by anyone and had to be defended by the government at any cost. Even the legitimate return and capital generation expected from the investment made in the public sector have not been achieved, as has been shown earlier.

The picture in the private sector has been ever more dismal because, although this sector has had all the advantages, namely, efficient management, cheap labour, availability of public finance, operation in areas yielding high and quick profits, minimum gestation period and availability of technology and infrastructure, it used all these facilities to generate unaccounted income by cheating the labour, the public and the government by evading the payment of proper wages and taxes. This unaccounted wealth was systematically used to lubricate and thus circumvent the decision-making points created by constraints and controls imposed by the bureaucratic authority

and this generated the malady commonly called corruption. More constraints and controls were imposed in order to stop the corruption generated by the earlier constraints, but this only brought about more corruption. As more and more unaccounted wealth accumulated in the hands of a few, the corrupting power increased phenomenally and dominated practically every field of public life including the political parties.

While on this point, a common misconception needs to be dispelled, even at the risk of being somewhat discursive. It is felt that parties can win elections only if they have large funds. However, it has been time and again demonstrated that although funds for propaganda have become an essential feature for elections, yet funds by themselves do not influence the elections, and the theory that votes can be bought has been rendered fallacious by the voters. Those whom one can buy at all are the electoral candidates or the elected representatives, but no party has either the funds or the capacity to buy the electorate. The elections held from 1977 to early 1983 bear more than eloquent testimony to refute this theory. The recent elections have shown that the common electorate votes more on the basis of its intuitive impulse. If it feels that a particular leader or party can deliver the goods, it goes with that leader or party en masse. In the same way, if the electorate is disappointed, frustrated or angry, then it does not hesitate to register these feelings by giving a negative vote against anyone who momentarily becomes the target of its wrath. This happened in 1977 when the people voted in favour of an amalgam called the Janata Party at the Centre and again in early 1983 when they voted for parties such as Telugu Desam in Andhra Pradesh and Janata in Karnataka. These elections have shown a dangerous trend of throwing up regional and fissiparous forces and unless the thinking people in this country wake up in time and find the causes for the growth of these tendencies and eliminate them, things could deteriorate very fast and the very unity and integrity of our country may be threatened.

Most of the regional and fissiparous tendencies are the result of basic frustration caused by economic conditions. Unless people in every part of the country are made to feel that their personal interests also would be better served by belonging to a single unified nation, the feeling of nationalism cannot be strengthened. Emotionally and spiritually an average person would naturally want to belong to a larger entity. It is only when he feels insecure for want of opportunities that he shrinks into the narrow shell of groupism and regionalism.

The real solution, therefore, is to involve in the mainstream the entire people of every region, irrespective of language, creed, caste, religion or region, and create economic opportunities by increasing productive activity communications and commerce. Thus, interrelationship would automatically grow and this would help in strengthening the bonds of unity.

The thesis being propounded here is to involve the entire population as equal partners in the economic activity of the production of goods and their distribution. It is common experience that a person gives his best when he has a stake in that work and when he gets job satisfaction. This stake can be created by making him a real participating partner in the productive activity and not merely an employee of some other master. The concept must be that land, being an endowment of nature, should be deemed to belong to the entire human society. Human beings should, by their entrepreneurship, organising capacity and labour, both skilled and unskilled, use this land for the production of goods and services and must do so as equal partners. This concept alone would create a sense of full participation and belonging. True equality does not mean everyone being identical members of society. The participation of labour and management on an equal footing would benefit all the participants who contribute to the overall production. Society has been, and will always be, willing to recognise and honour persons of excellence in the fields of science, technology, arts, literature and sports.

But by no stretch of imagination does this mean that the better qualified members of a society can be given the right to exploit other members and to deprive them of even their legitimate needs. They cannot also claim a right to acquire, usurp and accumulate an extravagant portion of the surplus created as a result of the labour of the entire society. They should not be allowed to squander money on ostentatious, non-essential, luxuries and comforts, particularly when other members of the human family are denied the very necessities. Therefore, in any productive or economic activity, there should be a sense of equity in equality and due recognition should be given to the members who contribute more in different fields for the growth of welfare of the whole society.

Having thus created conditions where all working people would have a direct stake in the productive activity as partners, the next issue would be that of obtaining job satisfaction. This can be provided only by creating adequate job opportunities so that people can choose jobs according to their likings and capabilities and would not be tempted to change jobs only because of the difference in remuneration. Very often, we know that persons opt for fields of activity in which they have no interest only because they offer better monetary returns. It is common knowledge that if the medical profession seems to yield greater returns, every father wants his son to be a doctor. The same is true about engineering. Some years back, to be a clerk in a bank was not a very attractive proposition, but today, because of the high salaries offered, even highly educated boys and girls prefer to get clerical jobs in a banking institution. This is true practically of all services and forms of employment. But yet, we

come across a phenomenon whereby persons, due to sheer love for a particular activity or a vocation, stick to it and even go in for these jobs which give them greater job satisfaction.

Hence, it must be the effort of the entire society to ensure that its members have adequate opportunities to go in for activities of their interest by providing adequate returns to enable a dignified living. This would be so particularly in the areas of services where productivity cannot be measured in terms of the quantity of goods. The quality of life improves because of the arts, the literature, the music, the dance, the sports, the drama, the threatre and all the finer aspects of life to which members dedicate themselves. Any society which wants to develop as a cultured society must learn to respect and provide adequate conditions of dignified living to its members who contribute to these areas.

While we are dealing with the production of goods, having dealt with the organised sector and having proposed a model for conducting economic activity on the principle of economic democracy which would prevent exploitation and would generate better and greater surplus, we now come to another area where productive activity takes place in the unorganised private sector. This, in many ways, is even more significant because a much larger number of members of the society are involved in self-employed vocations spread all over the country.

In an economic set-up, goods can be produced with modern technology in a large-scale centralised form of production, with the help of machines, including automatic machines, and thus the economy of scale can be achieved. Although this method of production requires heavy initial capital investment, it can eliminate the use of labour and can attain larger production. Now this is where the whole concept of planning in the use of technology becomes relavant. On the one hand, there is a school which believes in allowing automation to be introduced to obtain economy of scale and doing away with manual or human labour; on the other, there are people who advocate total decentralisation and dispersal of means of production, allowing every individual to produce goods irrespective of their quality.

We need not opt for either of the two extremes. We can always determine suitable areas and adopt methods of productive activity by which goods can be produced by the maximum number of people, and even in the case of individuals, all their manual drudgery can be reduced by providing them with small machines, for example, a sewing machine or a grinding wheel operated by power. The idea ultimately is to ensure that goods are being produced by utilising the productive labour of every member of the human society for which he must get an adequate remunerative return which becomes his purchasing power and which, in turn, creates the economic market and national surplus. So, theoretically, even if a few persons, by having an entirely automated plant, were able to produce goods, the question would be to whom will these goods be supplied and who will buy them? For, if most members of society have no purchasing power, which would be the case if they have no work, then producing goods even by mechanised automation would be of no avail.

Interestingly, even in developed societies, people get fed up of what are known as ready-made garments which are of standard shapes and sizes. Tailor-made or custom-made dresses are becoming a highly expensive luxury. The same thing is true in certain fields such as handircarfts, where there is a personal touch and therefore greater value. Human tastes will continue to differ and change with regard to items of comforts and luxuries. But in the matter of necessities, one does not argue much about the shape and size of the grain as long as one gets an adequate quantity to satisfy one's hunger. The same is true about clothing when it becomes a basic need. All that a person wants is a durable dress which can cover him and protect him from inclement weather.

Therefore, in a developing society, the first and foremost emphasis must be on allowing the production of goods which are necessities. These goods should be so distributed that they reach the maximum number of people spread out in the rural areas. Initially, the quality of these products may not be as good as that produced in the automated plants, but given the help of modern technology, such as power, the electric motor and improved designs, the self-employed producer can manufacture even better quality goods such as cloth apparel, footwear, soap and other detergents, oils, kitchenware, match boxes, furniture, housing material and many other items of household requirement. He can also produce ancillary items in latest technological fields such as electronics and supply them to the units where the end-product is assembled. Ancillarisation in even sophisticated branches of production can be encouraged, particularly in the developing societies where manpower is available in plenty and is less expensive.

(Next issue : National Marketing Organisation)

IRDP performance looks up

The qualitative performance of Integral Rural Development Programmes has shown a distinct improvement in the last four years. The achievement in the coverage of Scheduled Castes and Tribes has gone up to 41.7 per cent in 1983-84 from 28.6 per cent in 1980-81. The average works out to 36.6 per cent in the plan period so far.

The Ministry of Rural Development has requested the State and Union Territory Governments to diversify the activities taken up under the IRDP and undertake more activities in the secondary and tertiary sectors. Consequently, 58.9 per cent activities were undertaken in the primary sector, 13.2 per cent activities in the secondary sector and 27.9 per cent activities in the tertiary sector in 1983-84. ☐

GRAMMAR OF PLANNING

A Serialisation 14

The international planning

P.R. Dubhashi

After the plan monitoring and evaluation as inputs of a successful implementation of planning the author discusses here international planning through various bilateral, multilateral economic arrangements and international financial institutions to strive for the optimum planning, which should be made a continuous process. He says, "the planning system must undergo constant improvements in the light of experience".

WITH THE EVOLUTION of national planning systems in many countries, a stage is set for some sort of integration or collaboration between the different national planning systems. In the years to come this is likely to replace, in a progressive mannei, international trade and capital flows through channels of private business. Already these latter are drying up with greater participation of the state in the economic system. The international economic institutions like International Bank for Reconstruction and Development or the Asian Bank are supporting in an increasing measure the economic development efforts specially of nations particularly, in the underdeveloped countries.

A new pattern

But this does not go far enough. A new pattern is, therefore, emerging for collaboration between the planning systems of the under developed countries and the socialistic countries. Such measures have already been taken between India and Russia and other eastern countries and joint economic commissions have been set up.

At the conclusion of the historic visit of the General Secretary of the Russian Communist Party on November 30, 1973 it was decided to set up Indo-Soviet study group, for cooperation between the Planning Commission of India and the State Planning Committee of the USSR.

The group to exchange experience in economic forecasting, formulation of projects and programmes and methods of monitoring and evaluation of projects is set up with the framework of the Indo-Soviet Commission on Economic, Scientific and Technical Cooperation. It compises membes of the Planning Commission-assisted by representatives of Central Ministries and officials of the State Planning Committee of the USSR (Gosplan). Specialists of other organisations and institutions connected with planning could be enlisted in the capacity of advisers or experts. The Group meets not less than once a year in New Delhi and Moscow by rotation. It exchanges the experiences and knowledge in the methodology of annual, medium and perspective planning. Agreed minutes of the study group are submitted to inter-governmental Indo-Soviet Economic Commission on Economic, Scientific and Technical Cooperation.

Similar procedures and processes have been evolved over years in respect of other eastern European countries also.

New international economic order

The concept of new international economic order which has gained increasing currency in recent years has opened up new opportunities for international planning. Economic thinkers, statesmen and diplomats as well as leaders of various countries have thought of in terms of north-south and south-south economic dialogue. The success of the European Economic Community has given a fillip to the idea of the Asian Common Market. Multilateral and bila-

teral aids from the developed to the developing countries and promotion of international trade on equal terms and without barriers between the developed and developing countries as well as amongst the developing countries have been increasingly advocated. Coordination between planning of various developing countries can provide an appropriate channel for such economic cooperation implicit in the international economic order. The Joint Commissions between India and developing countries can take up such coordination between India's development plans and the plans of other countries.

The optimum planning

We have considered in previous chapters planning in all aspects-the concept and substance of planning, its methodology and process, its organisation and management, its financing and evaluation.

An important point which has emerged is that planning is not an end in itself. It is a means to an end. It is not an ideological finality. The tests of its success have to be pragmatic. The mere incantation of planning is no guarantee of successful economic development. It has to be evaluated in the light of experience. There cannot be a dogmatic insistence that "more the planning, the better it is for the economy". If in the case of planning, as in architecture, "less is more", we should not hesitate to accept it.

Has planning been conducive to the attainment of socio-economic goals ? Has it enabled society to achieve the largest growth of which it is potentially capable and distribute the fruits of growth far and wide through all the sectors of the society ? Posing the question, "Is the French economic expansion attributable to the existence of Le Plan ?" Bauchet gives the following answer. "Growth has been particularly vigorous since planning was introduced. During the period of planning, France has achieved a rate of economic growth at least double that of United Kingdom. French joint planning procedures have contributed something to France's economic development". A 70 per cent increase in national product in twelve years gives France a very satisfactory position in the field of peaceful international competition.

The achievements of planning in the socialist countries have also been impressive. In the Soviet Union, the national product increased from 1950-58 at a speed of approximately 10 per cent per annum and was expected to exceed 7 per cent net annum in the years 1959- -65

Japan achieved miraculous economic development during the thirty years after the end of the war. Raising itself from the war time ruins and utter poverty, Japan experienced waves of technological innovations and high economic growth. However, planning does not claim credit for all this economic accomplishment. The modest claim of the Japanese Economic Planning agency is that it has made constant efforts to respond to varied changes in the Japanese economy and assure its smooth management. The agency sometimes failed to cope up with coming changes and at other times, made pioneering achievements, providing foresight ahead of time.

In India, Planning has enabled the development of basic industries, building up of infrastructure and modernisation of agriculture. However, the rate of economic growth has hovered around 3 to 3.5 per cent while the plans aimed at a rate of 5 to 5.5 per cent. This must be considered to be a short-coming of our planning effort.

Economic management technique

Planning is not so much an ideology but a technique of economic management which has been found useful in countries with different economic systems. At the same time, different economic systems themselves have shown a tendency towards convergence. This has made it possible to think in terms of an optimum system of planning which can combine the best features and techniques of the planning systems of different countries. This is essentially an eccleciastical approach rather than a dogmatic ideological approach. The concept of optimum planning, if developed over a period of time, should enable a country to secure optimum growth.

Developing a system of optimum planning, drawing on and assimilating the best features of the different planning systems of the world in the developed as well as developing countries, is particularly important for India because after thirty years of experience of planning, we have realised that our actual accomplishments which are in the neighbourhood of about 3 to 3.5 per cent of growth rate have fallen short of our target of about 5 to 5.5 per cent growth rate. Our planning has gone more or less on a beaten track and is in need of innovations which could make our planning more effective.

Some suggestions

The development of optimum planning system requires a conscious attempt to introduce modifications and innovations after learning from experience. The analysis of the planning system in various aspects attempted in this book does throw up some suggestions for such changes.

Firstly, two components of planning should be clearly distinguished-public investment component and the component of general economic development The first component must be treated as imperative though the second may be considered as indicative. This means that there should be concentration on public investment planning in respect of which slippage of any sort should be ruled out. With a firm commitment to public investments and cent per cent success in their execution, it should be possible to gain a greater measure of reliability regarding indicative components of the planning.

Secondly, while there could be a measure of compulsion regarding public investment, indicative planning should mainly rely on fiscal and monetary devices.

Thirdly, those patterns of planning which require popular participation should be clearly identified and attention focused on means of mobilising popular participation in respect of those components of planning.

Fourthly, there should be a constant pursuit of the concept of multilevel planning with maximum scope given for decentralised planning, including planning by local authorities. In respect of the decentralised sector centrally conceived schemes need not be considered as guidelines.

Fifthly, sectoral planning should be supplemented by special planning.

Sixthly, scientifically formulated, technically feasible and economically viable projects should alone qualify for investment included in the plans

Seventhly, employment promotion should be closely related to the formulation and implementation of projects which can contribute to production and productivity.

Eighthly, the pattern of investment should correspond to the factor endowments, especially the abundance of manpower in the country.

Ninthly, planning must be constantly checked for internal consistency.

Tenthly, the plan targets must not be out of proportion to administrative capability for plan implementation as well as availability of fiscal and financial resources. Planning should be based on facts rather than hopes or wishes.

Eleventhly, the organisation of planning should be made more and more technically qualified especially at the intermediate and lower levels while the organisation at the higher levels should be more responsive to the realities in the field.

Twelfthly, planning should be considered essentially as an exercise based on experties and should be considered to have its own validity transcending changes in the political complexion of the governmental authority.

Thirteenthly, policies and their execution, programmes and their implementation and corporate planning should be considered integral to the process of planning.

Fourteenthly and finally, plan monitoring and evaluation should be in terms of impact of planning rather than merely in terms of inputs and outputs.

The search for an optimum system of planning is a continuous process. The planning system must undergo constant improvements in the light of experience. □

(Concluded)

Memorials for Shrimati Indira Gandhi

THE UNION GOVERNMENT have taken the following decisions to perpetuate memory of Shrimati Indira Gandhi, the late Prime Minister:

(1) No. 1 Safdarjung Road, New Delhi, which was the residence of Smt. Indira Gandhi for over 17 years, will be maintained as a memorial.

(2) A suitable monument for Smt. Indira Gandhi will be erected in Delhi. The site and design of the memorial will be selected in consultation with experts.

(3) A suitable Samadhi will be erected at the place of cremation. The plan and design of the Samadhi will be such as to be in harmony with the surrounding Rajghat-Shanti Vana landscape. An appropriate name for the Samadhi is being chosen.

(4) The international airport which is under construction in Delhi will be named Indira Gandhi International Airport.

(5) The Indraprastha Stadium will be renamed Indira Gandhi Stadium.

(6) An Indira Gandhi National Centre for Arts will be constructed at a suitable location in Delhi. This Centre will have a separate section for the folk arts.

(7) A statue of Shrimati Indira Gandhi will be erected in Delhi.

The Government has also decided to institute an Indira Gandhi International Peace Prize. □

Surgical treatment of heart disease

Prof. P. Venugopal

Coronary bypass surgery creates alternate blood channels which carry blood from the aorta to the coronary artery bypassing the obstruction and restoring blood supply to the heart muscle. It is also known as a surgical marvel of life saving device. This mode of treatment is a safe, effective and reliable instrument in the direction of a long and healthy life of a heart patient. The AIIMS has developed this expertise effectively and is capable of offering it safely and economically to the public.

CORONARY ARTERY BYPASS grafting is the most effective means of directly increasing the blood supply to the ischaemic heart muscle. Since 1968 when the procedure was first performed, over a million of such operations have been performed all over the world and currently this is the procedure of choice for the management of this widely prevalent and often fatal disease.

Coronary bypass surgery

The heart muscle gets its blood supply from the aorta through three main coronary arteries. Two are on the left side which are branches of the left coronary artery. The single artery on the right is known as the right coronary artery. Branches of these arteries ramify throughout the heart and provide oxygen-rich blood to nourish the heart muscle. When any of these main arteries gets blocked by coronary artery disease then there is decreased blood supply to an area of heart muscle and this produces angina. Coronary bypass surgery (grafting) is a procedure by which alternate blood channels are created surgically which carry blood from the aorta to the coronary artery bypassing the obstruction, thus restoring blood supply to the heart muscle. The conduit used for this bypass is usually the saphenous vein from the leg, which because of its superficial location and length is an ideal conduit for this procedure. Removal of the saphenous vein from the leg does not cause any significant disability as other veins in the leg quickly take over its function.

Advantage of coronary bypass surgery over medical therapy

The advantages of surgery are manifold. Briefly they are :

(a) Relief of angina with loss of no medication.

(b) Improved quality of life

(c) Increased longevity.

(d) Reduced risk of repeated heart attacks.

(e) Correction of associated complications like ventricular aneurysm (dilatation of the heart muscle), mitral regurgitation (leaking of the valve), ventricular septal defects (hole in the heart membrane) etc., which can not be corrected by medicine.

The most significant advantage of surgery is that the constraints on physical activity are removed and the patient can lead a normal life, and even engage himself in activities which involve physical exertion. The fear of 'heart attack' which hangs like the 'Sword of Damocles' over the head of every coronary patient, is completely eliminated by surgery.

Surgery is indicated in the following circumstances :

(a) Angina unrelieved by medication

(b) Triple vessel disease

(c) Left main stem disease

(d) Complications of myocardial infraction.

The indications for coronary artery surgery have broadened over the years as the risk of the operation has decreased considerably. Surgery is advisable in all patients with symptomatic coronary artery disease. In such cases surgery provides relief of symptoms. However, in certain situations like main stem disease (also known as 'widow-maker disease') and in severe tripple-vessel disease the life expectancy on medical treatment alone is quite low; hence surgery is life-saving in this case. The 10-year survival with triple vessel disease is only 20 per cent without surgery whereas with surgery the 10-year survival becomes 80 per cent. Likewise the risk of sudden death in patients with left main stem disease is more than 50 per cent in one year. Surgery provides long term relief in these patients. Complications like ventricular aneurysm and mitral regurgitation can be corrected only by surgery.

The surgical procedure

The operation is carried out under general anaesthesia. The first step of the operation is to remove the saphenous vein from the leg, tie off all the branches and to test it for any leakage. Then the chest is opened by cutting across the breast bone (sternum) and the heart is exposed. For performing the delicate suturing between the coronary artery and the saphenous vein, a still bloodless field is essential. This is achieved by connecting the patient to a heart-lung machine by special tubes This machine takes over the function of the heart and lungs while the surgery is being performed. The heart is stopped and cooled with ice-cold saline. Portions of saphenous vein are then sutured between the aorta and the coronary arteries by passing the block or the obstruction. (Each of these is known as a graft. The number of grafts required is determined by the number of main vessels blocked, which is determined by coronary arteriography). The heart beat is then restored and the patient is disconnected from the heart-lung machine as soon as the heart starts beating effectively. The chest and leg wounds are then dosed systematically.

Preparation for surgery

Best results are obtained only if the patient is optimally prepared for surgery-both physically and mentally. Patient and family counselling is part of the preoperative preparation to allay the fears of the patient and his family members, and also to gain the patient's confidence. The physiotherapist plays an important role in preparing the patient for surgery.

Common Problems during this period :

(a) Chest pain : This results from the movement of the ununited cut-ends of sternum (breast bone). This pain usually subsides within six to eight weeks by which time the cut ends of the bone unite. Analgesics like Proxyvon or Analgin will relieve this pain.

(b) Swelling of the legs : This results from venous congestion in the legs after removal of saphenous vein. To prevent this the patient must wear elastic stockings or a crepe bandage whenever he is standing or walking. When he is sitting he must keep his feet elevated on a stool. Swelling usually subsides by 3-6 months.

(c) Breathlessness : The body usualy takes a few weeks to recover from the effects of a major surgery. Till then it is wise not to over exert and to take rest at frequent intervals. This usaully subsides in 6-8 weeks.

Do's and don'ts after surgery

(a) Do not smoke at all. It accelerates coronary artery disease and may lead to blockage of the grafts.

(b) Drinking alcohol is best avoided, but if it cannot be given up, restriction to two ounces a day is desirable.

(c) Heavy exertion like driving, lifting weights, cycling etc. should be avoided for at least six weeks after surgery.

(d) Sex . There is no restriction on sex as long as the patient feels fit. Undue pressure on the sternum, however must be avoided in the initial period after surgery.

Teach the patient breathing exercies and leg exercise which must be strictly performed in postoperative period. A thorough check is made for any associaed illnesses like diabetes, hypertension, chest infection, dental infection etc., which are fairly common. These have to be controlled adequately before surgery to prevent any complication. The patient is usually admitted a few days prior to the scheduled date for opeartion so that all the above preparations can be made. In addition, the patient gets acclimatized to the hospital atmosphere and also gains confidence and srength by seeing and talking to patients who have already undergone surgery.

The post-operative course

The first 24-48 hours are spent in intensive care unit after which the patient is transferred to the postoperative ward. The patient is able to eat a light meal in the following morning after the surgery and by evening he is made to walk about the ward. It is during this period that the maximum cooperation of the patient is required. Breathing exercises that have been taught must be performed religiously and the patient must make every effort to be up and about. The physiotherapist plays an invaluable role during this period. Over the next few days the patient is gradually able to perform routine activities and is

discharged after removal of all stitches on the tenth day after operation. A certain feeling of physical weakness is expected during the postoperative period. However, a good diet and graded exercise can soon overcome this problem. By six weeks the patient should be able to return to his work.

Experience at the All India Institute of Medical Sciences

Over the past three years more than 160 patients have undergone coronary artery bypass surgery at the All India Institute of Medical Sciences. The number is increasing rapidly and currently we are performing four to five such operations every week in addition to other types of open heart surgery. The patients who have undergone surgery have mostly been referred when they have been severely symptomatic and have advanced disease. Thus more than 80 per cent of these patients have had severe tripple vessel disease. 28 patients had obstruction of the left main coronary artery disease which, as has been mentioned, carries a very high risk. About 40 patients were under 45 years of age.

On an average, every pateint has received four grafts. In addition, some patients required other procedures like endarterectomy in 32, valve replacement in 6, and removal of a left ventricular aneurysm in 9 patients.

Despite the severity of disease in these patients the results have been very good. The overall mortality is 3-4 per cent which is comparable to reports from the advanced centres in the west. If patients come in the early stage of the disease the risk of the operation is negligible.

On follow-up 90 per cent of the patients are free of angina and have returned to gainful occupation. Repeat coronary arteriography, done in a small group of patients, shows that the grafts are patent in the majority of the patients.

Coronary bypass surgery at the AIIMS costs each patient approximately Rs. 12,000/-. This is towards the cost of the disposable items required during the surgery. No charge is levied on account of operation. This is a negligible amount compared to the cost of getting the same surgery done in SUA which is Rs. 3.3 to 3.5 lacs. We believe that coronary bypass surgery is a safe, effective and reliable mode of treatment for coronary artery disease, and we at the Institute are capable of offering it safely and economically to the public.

(Based on public lectures of All India Institute of Medical Sciences, New Delhi)

Organisation of the rural poor

THE MINISTRY OF LABOUR, Government of India, had introduced a scheme to train honorary rural organisers to help the rural poor, particularly the labour and educate them of the value of organisation, their duties and responsibilities as workers and introduce them to various rural development programmes like IRDP, NREP, TRYSEM and the Special Component Plan for development of scheduled castes as well as the tribal sub-plan.

The scheme which was introduced in 1981-82 in 450 blocks across eight States, is now being extended to 1,000 blocks in 15 States and Union Territories. The Government feels that association of local level non-government organisations would help implementors of the schemes to identify proper candidates being selected as honorary rural organisers which is vital for the success of the scheme.

Wood-burning stove

THE RURAL ENERGY LABORATORY of the Central Power Research Institute, Bangalore, India has designed a wood-burning stove of 30 per cent efficiency. The stove consists of a cylinderical combustion chamber covered at the top and bottom with slotted plates of a particular pattern. Inside the chamber, a mesh is fitted to serve as a fuel-burning deck. The result is sustained and complete burning of the fuel with less luminous, less smoky and well-directed heat.

The tests conducted showed the average fuel consumption to be 0.5 Kg. per hour. The stove has been designed in three different sizes to suit families of different strength. The estimated costs are Rs. 30.50 and 60 respectively. □

(Continued from page 5)

The last point I wish to put forward for your consideration relates to the adoption or adaptation of the human resources development technology. Many of the tools and techniques often advocated are those which are relevant in the economically advanced countries. It is necessary to examine whether there are equally applicable in our country, particularly in view of the abundance of man power and state of development of our technology. Every effort should be made to develop this technology indigenously to suit our conditions. This will call for patient and persevering efforts. We should consider how such an effort can be organised.

We are at the threshold of the Seventh Plan. It is the right time to identify the human resources development effort needed to achieve the objectives underlying the Plan. There are high hopes and expectations of economic betterment. The attitude of helpless acceptance of poverty is no longer there. People have become conscious of their rights and demand speedly betterment of their conditions. Their aspirations have to be met within a reasonable time through rapid economic development and the human resources development is a sine qua non for this. □

BOOKS

Material management

INTEGRATED MATERIAL MANAGEMENT—Concepts and Cases by M.D. Patel, S.A. Chunalla and D. R. Patel, Himalaya Publishing House, Bombay. Pages 610. Price Rs. 125.00

A COUPLE OF DECADES back, the inventory control manager was nothing more than a glorified clerk with little or no training. His place had no recognition in the hierarchy of company management. His work at best was haphazard, unchallenging and more by guess than by system. His main worry was to ensure sufficient stock of materials in stores. In contrast to this, today's materials manager is, more often than not, concerned with how to reduce inventory so that the cost of maintaining it may not be adversely affected. As such, the present-day inventory control involves (i) laying down of a procedure to procure an adequate supply of the required materials. (ii) evolving a system to maintain and protect the materials after they are received, and (iii) devising a methodical way of issuing materials when and where they are required. These three functions of procuring, maintaining and issuing materials are indeed three major functions of effective inventory management.

This book under review deals with precisely the aforesaid parameters in materials management. The collective wisdom of the three authors has resulted in bringing out an outstanding book on the subject. In five parts and 28 chapters, the various remifications and technicalities involved have been quite sufficiently discussed, analysed and explained. A number of authors and authorities have been quoted to substantiate the themes.

According to the authors, as far as organisation of material management is concerned, it has remained a matter of controversy on two important issues viz., the inter-relationship of purchasing and materials management, and the treatment of the subject as subordinate to manufacturing. Also, generally, purchasing and materials management are used interchangeably. The authors make a plea for treating material management as distinct from manufacturing management. The topics dealt in the book are purchasing, materials planning, forecasting for materials management, etc. In materials planning, the PERT analysis has been elaborately handled in a lucid style. Likewise, forecasting has been explained in statistical formulas. Quality, quality assurance and reliability are discussed with the help of several illustrations. In the chapter on pricing theory, the pricing practices have been described in their theoretical framework as well as in their practical application.

It is true that in materials management the aspect of purchase timing has now become quite crucial and important. The authors have rightly devoted a full chapter to this issue. Inventory and stores management have been treated with a medley of theories and statistical analyses. The legal aspects of purchasing and allied activities make an interesting reading. Another usual chapter is on government as a purchaser.

The book contain 16 cases which have been analysed briefly to explain the various topics pertaining to materials management. The cost of physically maintaining the inventory represents a relatively large expenditure in the form of storekeeper's wages, cost of storage facility, interest, clerical assistance, and the like. In addition to this, there are other costs such as losses resulting from price declines, obsolescence, deterioration, breakages, unnecessary space requirements, unwarranted utilisation of equipment and labour, and extra taxes and insurance. In view of this, it is necessary that the end objective of inventory management must be guided by the need for having correct quantity of materials on hand with a minimum expenditure of investment consistent with expediency.

It is worthwhile that material management is made a part of production control in order to maintain a flow of materials needed for the efficient and continuous operation of the production line. Therefore, its coherence and coordination with production programmes are of utmost necessity in the present times of large-scale production that takes place generally with advanced technology.

Navin Chandra Joshi

Builders of Modern India, K.M. Munshi by V. B. Kulkarni, Publications Division, New Delhi. Pages 293, Price Rs. 25.00.

THE VOLUME UNDER REVIEW by virtue of its being a recent addition to the series, goes to signify beyond any shadow of doubt that the said series is as live as ever and the editorial outfit of the Publications Division is veritably a professional force to reckon with. The qualities of a flowless print and simple get up have been meticulously maintained.

The innumerable stalwarts of our freedom struggle from Tilak downwards have been acknowledged as men of parts as well as letters and K.M. Munshi is no exception. The volume affords us a thread bare biographical exposition of K.M. Munshi—the lawyer, the freedom fighter, the Minister and Governor and the creative writer. He was a noted figure both in Gujarati and Indo-Anglian fiction. His outstanding contributions to the national causes before and after independence have been highlighted at the proper juncture and in the proper perspective. If on the one hand he was one of the Chief Architects of India's Constitution, a competent Minister and Governor, he had on the other hand the rare knock of adhereing to his independent views and convictions whereby he could strike a way of his own away from the mainstream of age-old stagnating politics of the Indian National Congress. His switch over to Swatantra Party is a point on instance.

Kulkarni's highly stylistic narrative does more than mere justice to his subject matter and makes it a highly readable and interesting lot for a paltry price.

R. P. Rahi

The parallel economy syndrome

The Unsanctioned Economy in India—Editors Monga and Sanctis, Himalaya Publishing House, Bombay (1984), Page 330. Rs. 175.

THIS BOOK IS on black or unsanctioned economy where back or unaccounted money is generated. It is often called also the parallel or illegal sector of the economy. Estimates of black money generated in India's economy range upto Rs. 47,000 crores (P. Gupta and S Gupta). There is no unanimity, however, on the actual size of the black money. In, this respect, the paper "Black Economy : A Review of Methodologies" by Poonam Gupta and S. Gupta is important. So also J. C. Sandesara's critical comments on it. G. S. Monga and V. J. Sanctis have contributed a key-note paper "The Challenge of Parallel Economy". S. B. Mehta's Paper on "High Savings and Other Paradoxes" is lucid and clear-cut

The book is divided into four parts : Part one deals with concepts, causes and remedies Part two goes into specific and narrow issues such as consumption dualism, tax evasion, invoice manipulation, unaccounted trade, black inflation and other policy issues. Part three discusses various estimates beginning from Kaldor, Wanchoo and others. Part four examines wider social issues of policy. The prologue and epilogue are repetitive in theme making one of these redundant.

The Wanchoo Committee estimated that black income in 1980-81 was Rs. 182,41 crores or as much as 16.3 per cent of India's GNP. J. C. Sandesara who critically examines, its size says black money may presently be over 10 per cent but under 15 per cent of the officially reported GNP. It means that black economy is generated at the rate of Rs. 1.70 crores an hour. Black money in USA is estimated at 8 per cent of GNP. In U.K. it is 14 per cent, and Belgium 15 per cent.

Black money depresses the official estimates of India's GNP and for that matter, her national income accounts. Consequently, the aggregate capital : output ratio should be lower than that estimated. Official estimates of the rate of savings which are pretty high around 16 to 20 per cent should in reality be lower. The total investments in the economy, if black money is included, would be much higher. Because part of black money is utilised in capital equipment, the value of capital equipment is under estimated too in official records.

The existence of black economy diverts resources from essential production to the production of high income goods of conspicuous consumption. Black money thus hinders planning and makes the implementation of government's economic policies ineffective, particularly in the field of credit and investment. The outstanding and ugly feature of black money is that it brings to nought government efforts to redistribute income and wealth equitably to create an egalitarian society. Social justice is crippled. There are several causes for the creation of black money as mentioned earlier and the Dagli Committee (1979) mentioned that "price and distribution controls have in the past led to the generations of black money on a significant scale."

The unaccounted money has eluded all kinds of harnessing, leave alone eradication, by the most ingenious and over-optimistic measures used by the Government so far. Various remedies have been suggested and adopted in the past to unearth black money e.g. the currency demonetisation in 1978, the various voluntary disclosure schemes beginning 1951 to 1975, special bearer bonds, tax reforms etc. These have been able to bring to the surface around Rs. 800 crores on a scheme. The question one would ask, are the economists' estimate of Rs. 47,000 crores of black money over-estimate and off reality ?

S. M. Shal

(*Continued from page* 9)

in those areas where quick returns are possible. In other words, the Railways should substantially augment their earning capacity by subjecting their commercial investment proposals to stricter test of remunerativeness keeping in view the constantly increasing cost of inputs so that they are in a position not only to meet their dividend liability in full but also provide for modernisation of assets.

As discussed in the foregoing pages, the financial picture of the Railways, which is the largest and most basic transport undertaking in the country as also the largest public sector undertaking, is one of unrelieved gloom. This should be of major concern. Transport is a basic infrastructure for the economic development of the country; to fulfil this need as also to be of utmost use for Defence purposes this undertaking has to play increasingly a progressive and forward looking role in the years to come. Such an attitude or approach is, however, not possible so long as the Railways are plagued or dogged by continued shortfalls in their working, quite often for reasons beyond their control. The situation calls for a remedial action at the proper level. In particular, a fresh consideration is needed on the quantum of social burdens which a transport undertaking like the Railways may, in fairness, be called upon to bear.

Now they save

KANDANPET, nearly twenty kilometres from Pondicherry, is a Harijan colony with 113 families. The residents are mainly agricultural labourers. Whatever little was saved by the wives was spent by their husbands on drinking.

Project Executive Office, Villianur, with the help of the local youth club started to propagate the idea of small savings amongst the villagers. Initially the response from the village was poor. But persistent efforts paid dividends. Now as many as 113 Recurring Deposit Accounts have been opened by the 113 households in a nearby post office through the women agents. The spirit of savings is slowly spreading in the surrounding villages too.

V. Govindaswamy,
Field Publicity Officer
Pondicherry.

Rs. 87.58 crores for small and marginal farmers in 1984-85

THE GOVERNMENT OF INDIA has released a sum of Rs. 87.58 crores to 20 States and nine Union Territories in current financial year under the special scheme for assisting small and marginal farmers for increasing their agricultural production. The scheme was started for the first time in 1983-84.

The scheme covers all the 5,047 IRD Blocks in the country and envisages an expenditure of Rs. 5 lakh per block to be shared equally between the Central and State Governments. In the case of Union Territories, the Central Government meets the entire expenditure. The massive programme aims at assisting the small and marginal farmers to enable them to invest in minor irrigation works and plantation of fruit and fuel trees on their lands. They are also supplied with free minikits of certified seeds and fertilizer for oilseeds and pulses.

Last year, the Government of India had released Rs. 85 crores to the States and Union Territories under the Scheme and progress achieved in the field was very encouraging. □

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Steady growth in Indian petro-chemicals

THE INDIAN PETROCHEMICALS CORPORATION registered a steady growth last year with its turnover increasing from Rs. 442.69 crores in 1982-83 to Rs. 472.31 crores in 1983-84. A Government review of the Company's 1983-84 annual report said that Indian Petrochemicals Corporation Limited made a net profit of Rs. 36.28 crores during the year which was lower than its net profit for the previous year due to the shut down of the naphtha cracker and downstream units for about two months and the substantial increase in depreciation.

According to the review, IPCL has already completed its VC/PVC project and the Petroleum Resins Project and these units have already started production. Some of the important projects currently under implementation are the FCC off-gas Utilisation—Polypropylene Copolymer Project, Acrylic Fibre Expansion Project, Xylenes Expansion Project; Linear Alkyl Benzene Project Expansion and the DMT expansion project.

There is a proposal for expansion of acrylonitrile plant capacity from 24,000 tonnes to 30,000 tonnes per annum at an investment of Rs. 6.27 crores.

During 1983-84, the gross sales volume of all products of IPCL was 2,90,475 tonnes compared to 2,81,432 tonnes during the previous year. Five more products were added under the Corporation's range—methyl acrylate, ethyl acrylate, butyl acrylate, 2-ethyl hexyl acrylate and ammonium sulphate during the year.

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IRDP, a myth or a reality

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yojana

MARCH 16—31, 1985 RUPEES 1.50

Energy forest for each village

NEXT ISSUE

Irrigation for development

'More accept small family norm

FOLLOWING SEVERAL MEASURES taken by the Union Ministry of Health and Family Welfare the momentum of family welfare programme has picked up considerably. The number of family planning acceptors rose by 10.8 per cent during the first 11 months of 1984 over the corresponding period of the previous year. About 12.55 million people accepted the family planning methods during the period.

About 3.87 million sterilisation operations were performed during the period against 3.72 million during the corresponding period in 1983.

I.U.D. insertions also went up to 2.23 million from 1.3 million. The number of women using oral pills also increased from 2.5 lakhs to 4.4 lakhs.

The maternity oriented post-partum scheme which has been a successful component of the family welfare programme also expanded considerably. The scheme offers necessary facilities for adoption of one or the other family planning methods by women at the time of delivery. The number of medical institutions approved for the programme are 554 at the district level and 400 at the sub-district level.

The Centre has asked the major States to fix targets for family welfare programme themselves keeping in focus the national target of giving protection to 60 per cent of couples by 2000 A.D. The States have been told to fix such targets after taking into account their present couple protection level and their management capacity.

A vigorous policy to promote spacing methods, such as I.U.D. devices, oral pills, 'Nirodh' has been adopted in view of the importance of spacing between births for ensuring child's survival and mother's health.

The scheme for involving private medical practitioners in performing sterilisation operations and I.U.D. insertions has been extended till March 31, 1987.

'Mahila Mandal' and Village Health Committees are being involved in the implementation of innovative scheme 'Parivar Kalyan Villages' to motivate all eligible couples in a particular village community to start practising one or the other family planning methods.

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IRDP, a myth or a reality!

Amrit Patel, Mahendra Patel and Raju Iyer

How can per capita investment of Rs. 1642 to Rs. 3201 help beneficiaries under the Integrated Rural Development Programme to cross poverty line once for all unless some of the issues raised by the Programme Evaluation Organisation and the World Bank in the implementation of the Programme are sorted out immediately? Instead of continuing the Programme as it is the authors suggest the need for making IRDP an effective instrument in the alleviation of poverty during the Seventh Plan.

FIELD STUDIES conducted by Programme Evaluation Organisation—a wing attached to the Planning Commission into the implementation aspects of the erstwhile SFDA projects few years ago had brought to surface serious lapses and avoidable shortcomings focusing the attention of our planners, development administrators and financiers to correct them through effective monitoring-cum-concurrent evaluation studies. Simila.ly, RBI also conducted field studies of these projects and drew pointed attention for correcting the deficiencies in the planning and implementation exercise. IRDP which has been under implementation since October 2, 1980 in the country is supposed to have taken the lessons from earlie: SFDA projects for effective planning and implementing the schemes under IRDP. However, to what extent the planning, implementing and monitoring exercise has been given refined touch and serious attention can very well be determined|appreciated from the studies reported by the World Bank.

While the programme has made satisfactory headway in achieving the stipulated targets viz. coverage of beneficiaries, propo.tion of SC|ST beneficiaries, release of subsidy, disbursement of loans, utilising funds for meeting administrative costs and the like, following questions have remain unanswered :

— Have the moveable assets purchased out of subsidy and bank's loans been really owned by these beneficiaries or have they been transferred to other well-to-do persons ?

— Have the beneficiaries for whom the programme is meant and to whom the subsidy and loan have been given really benefited ? If so, to what extent ? Whether have they crossed poverty-line once and for all.

— Have the supporting facilities including inputs, raw-mate:ials, marketing, technical guidance, etc. which have direct bearing on the successful implementation of the programme been created ?

— Can per capita investment of Rs. 1642 to Rs. 3201 help beneficiaries to cross poverty line once and for all as envisaged being the p.incipal objective of the programme ?

The current approach to the fulfilment of financial targets has resulted in much infructuous expenditure. Additional investments under the programme would therefo e exacerbate the problems that have surfaced so far. The major weaknesses of the programme have been found to be the unrealistic estimate of the incremental capital-output ratio used in the calculation of additional income generated through the prog amme. Improper identification of beneficiaries in

almost all states has resulted in the inclusion of many who are not poor and the exclusion of several really poor families from the programme, inequitable distribution of funds which do not take into account the level of development of the various districts and the population into account, inflexibility in the programme, lack of manpower resources and inefficient/ineffective administration. The capital-output ratio assumed being far higher than what has been actually realised while fixing the financial resources for the programme and the insistence on covering the targeted number of beneficiaries, there has been a tendency to concentrate resources on the upper sections of families below the povertyline. Thus the extremely poor who should have been the target group of the programme tend to be left out of the programme completely. This has been compounded by the lack of any effort to identify properly the beneficiaries with the result that very large number of non-poor have benefited from the programme.

The failure to identify properly the beneficiaries has been attributed partly to the lack of preparatory work to determine the number of the families below the poverty-line and the hurried manner in which the programme was extended to cover all the blocks in the country without toning up the administartion to deal with the job. Besides, there was no attempt whatsoever in most states to involve the Gram Panchayats in the job of identification one of the other major weaknesses of the programme has been the tendency to overlook the differences in the level and incidence of poverty in different states and within states between different blocks. Consequently, the distribution of funds among the blocks is inequitable. The further a family is below poverty-line, the greater the resources that are required to pull it above this line. However, under the programme all blocks irrespective of their level of development are given the same amount. Apart from the country without toning up the administration no attention seems to have been paid to even demographic factors. The formation of blocks in the country is itself anomalous with some states having a larger number of blocks relative to their population size, while a taluka is considered a block in some states, in others, four to five talukas make up a block. Consequently, states with larger population have tended to get less funds than those with smaller population.

In many cases, there is a mis-match between the programmes that are sought to be implemented and the requirements of the region. As an instance, there is tendency to concentrate on the milch animal scheme even in drought prone areas where both fodder and markets for milk are hard to find. One of the major schemes that has proved ineffective is TRYSEM which is being implemented without considering whether the villages concerned will be able to support processors of material, repairers of requirement and provision of services. IRDP is almost equated with the milch animal scheme without taking into account the need for the development of infrastructure, the availability of land for fodder and the upward thurst in the prices of upgraded animals as a result of the scheme. This factor has resulted in the investment in low grade animals whose capacity to yield any substantial increase in income is limited.

Crossing the poverty line

The emphasis under IRDP is not on providing just some kind of assistance and achieving the target of an impressive number of beneficiaries but on providing *substantial* assistance to the identified participants which should increase their incomes to a significant extent so that they cross *once and for all* the *poverty-line*. Thus, planning exercise has recognised the effective role the DRDA officials have to play in ensuring that the beneficiaries belonging to these target groups who have no access to the sources such as technical guidance, raw material, equipment, training, marketing, pricing of the products, credit, etc. are getting these facilities either under one umbrella (say DIC, FSS, RMSC, etc.) or through a tie-up arrangement. In fact, experience reveals that those beneficiaries are given subsidy and credit for securing productive asset and then left to themselves for other felt-needs. It is then this area where exploitative forces do thrive and survive on virgin land.

Under IRDP, the Antyodaya approach has been recommended in regard to the selection of the beneficiaries under which the poorest of the poor are to be selected first. While small and marginal farmers have at least some land from which they can make out subsistence living, it is the landless labourer, released bonded labourers, tenant farmer, share-cropper and the like who are non-land based and have no regular source of income need to be identified and assisted under this programme through provision of package of schemes and services. Only then the subsidy, credit and other concessions would not be cornered by the relatively much better-off families. In this case also, flaws in the identification process have enabled well-to-do families take advantages in preference to the weakerest of the weak.

Sustained incomes for beneficiaries

The IRDP envisages monitoring of additional income generated in the case of each participant. In fact, this is the very basis of ensuring that the participant family derives regular income and crosses the poverty-line once and for all. For this purpose at the block level a more detailed monitoring is called for. It should be done in respect of each selected beneficiary. For this purpose, an identity-cum-monitoring card (IMC) has been devised. The information should be collected for each selected beneficiary. One copy should be with the beneficiary. Details of assistance provided should be entered in this book from time to time. All concerned agencies should be given this book so as to watch the progress of the beneficiary from stage to

stage. Such a watch is kept till the beneficiary takes up his scheme and makes a success of it. Follow up should normally be done for a period of two years after the beneficiary takes up his activity|scheme by which time the beneficiary household would normally be able to cross the poverty-line. However, this IMC has so far not been given to all the beneficiaries in every block and wherever it is given, no entries of additional production, income, employment, problems of developments, factors impeding the smooth implementation of the scheme, training needs etc. have been made. In fact, bench-mark survey of each and every family under this programme is a must. However, hardly any effort is made by the DRDA officials to monitor the progress of the scheme|activity pursued by the beneficiaries. Lack of monitoring effort has, in a few cases, encouraged the beneficiaries to sell their assets in order to encash subsidy and credit, resulted into less production of milk, eggs, income or no income due to death of animal or asset. With the objective of enabling the rural population to get maximum benefit out of the various schemes being implemented under the IRDP, it would be necessary to acquaint the beneficiaries with the latest technology in the relevant fields by evolving suitable training programmes. Keeping this objective in view, training of beneficiaries who are introduced to new schemes, new occupations or modern technology is an important component of the IRDP. The full cost of tarining of beneficiaries may be provided out of this programme. Training is envisaged both in the agriculture and allied activities as well as in industrial activities. Training in agriculture and allied activites should be conducted in Gram Sevak Training Centres, Farmers' Training Centres, Krishi Vigyan Kendras and Agricultural University. Training for setting up Rural Industries, Artisans' activities etc. may be imparted in the I.T.I.s, particularly, training schools run by the KVIC. All India Handicrafts Board, etc. Though such a provision is there as an integral part of the programme, hardly effort is made to train the beneficiaries, improve their skill and make them enhance productivity of reasources and income.

Preparation of block plan

While a comprehensive block plan will have to be prepared taking into account the objectives of a model block plan, the plan should be formulated taking into account the schemes that are eligible for assistance under this programme. The first step in the preparation of block level plans is the formulation of a resource inventory in respect of the selected block. The resource inventory will not be a mere aggregation of data pertaining to various sectors of the block economy. The resource inventory should lead to certain specific action programmes which can be built into the block level plan rather than merely stating certain possibilities, which may or may not be germane to the block level planning at all. To be specific, the resource inventory should really concentrate on identifying potentialities which can be best exploited at the block level. Though this has been the basis and starting point for planning and implementation of programme, nowhere such a comprehensive plan has been prepared. What is being observed is that a list of beneficiaries identified under the programme is prepared and then application is filled up in respect of each beneficiary for a purpose|activity and this application is sent to the Bank's branch. Then the process starts of following up the applications in respect of pending, rejected and sanctioned. Instead village camp, credit camp is organised for getting the applications sanctioned. This has created problems of long-term implications. Earlier, we formulate the comprehensive block plan, better would be the end-result.

Need for monitoring

The above discussion brings to sharp focus the fact that there has been wide gap between what has been expected in the planning of IRDP and what has been attempted during the implementation process. This calls for urgent need for evolving an appropriate *monitoring mechanism* at the district level in order to continuously ascertain|verify as to whether following functions|roles are played by the concerned agencies during implementation of the IRDP :

— Comprehensive block plan formulated to explore the potential for development which IRDP beneficiary families can be enabled to exploit.

— Families below poverty line identified strictly in conformity with the guidelines of the Government of India so as to avoid chances of cornering the benefits of the activities by the well to do families.

— Attempts are made to ensure backward and forward linkages in respect of each of the schemes to ensure successful implementation of the schemes and whether they are appropriately integrated with the overall development programme being undertaken in the district.

— Location-specific schemes formulated in accordance with the resource-potential existing in the block and preference of the activities by the IRDP beneficiaries.

— Identity-cum-monitoring card (IMC)) has been given to all beneficiaries and bench mark survey data recorded in the card as well as other data on increased production and income accrued to them after implementing the scheme so as to ensure that the entire beneficiary family (and not one member of the family) moves above poverty line.

— These families are timely contacted to find out their problems of development which could be solved through evolving various formulae.

— Can the agency responsible for implementing the IRDP establish the percentage of families who have crossed poverty line once and for all which is the principal objective of this programme ?

— Banks have been rigidly following instructions of the Government in respect of minimum stipulations to avoid delay in the flow of credit vis./security, rate of interest, repayment period, viability of the project, unit cost, follow-up and supervision, etc.

Issues before the Seventh Plan

While in the VII Five Year Plan, there is likelihood of raising the amount of credit to Rs. 12,000 crores and subsidy of Rs. 7500 to 24 m families above poverty line, following issues need careful debate|consideration :

— Whether district level planning machinery to undertake this herculean task is to be strengthened. If so, how and in what manner.

— Whether branches of banking system who have to implement IRDP in a time bound limit are to be strengthened to perform all functions connected with the achievement of the objective of bringing 24 m families (not members) above poverty line once and for all.

— Whether availability of resources in terms of money particularly credit by way of refinance have been properly estimated|found out and infrastructure have been properly planned for development to keep in tune with the requirements.

— What would be the role of DRDA, DIC, Lead Bank Officer and other institutions like KVIC, KVIB, Handicraft Board, Handloom Board, Sericulture Board, Coir Board, etc. in this programme ?

— What specific role Panchayati Raj Institutions should play in making this IRDP a success ?

— How the implementing agency, Banks and Government are planning to take care of those 15 m persons (not families) who are supposed to have been assisted under IRDP during Sixth Plan in order to ensure that they are enabled to cross poverty line and prevented to sink in poverty once again.

— How does the banking system propose to service 5 m additional accounts (total would be 72 m) every year? What manpower planning did they undertake in the sixth plan for this purpose ?

— How do banks and DRDAs devise a system for recycling of funds as an integral part of this programme ?

— How are lessons of Sixth Plan for integrating IRDP with over-all development plan in a block fruitfully utilised for implementing IRDP in the Seventh Plan ?

If past experience is any guide in implementing IRDP, all these issues need to be seriously sorted out immediately otherwise the objective of IRDP would remain only on paper and country would have satisfaction to know that all those who have been provided credit and subsidy have crossed poverty line. □

Institutional assistance up by 26 per cent

There was a spurt in institutional assistance to the industrial sector during 1983-84. The annual rates of growth of such assistance rose from 13.9 per cent in 1982-83 to 25.9 per cent in 1983-84. Disbursements increased by 21.5 per cent as against 14.5 per cent in 1982-83. The significant rise in assistance was for the backward areas and high priority industries like cement and power generation. The total investment in projects assisted during the year is estimated at Rs. 8,000 crore.

According to a Report of the Industrial Development Bank of India, annual sanctions of the public financial institutions crossed Rs. 4,000 crore mark in 1983-84. There was a significant rise of 44.5 per cent in the flow of assistance to specified backward areas from Rs. 1,191 crores in 1982-83 to Rs. 1,720 crores in 1983-84. The share of backward areas in total sanctions rose from 37.4 per cent to 43.1 per cent.

Sector-wise private sector accounted for 70.9 per cent of total sanctions. Shares of public and joint sector projects were 14.3 per cent and 11.8 per cent respectively. The balance 3 per cent went to the co-operative sector. Revival of sick units continued to attract the attention of the financial institutions. As at the end of December 1983, the number of sick units taken up for nursing by all-India financial institutions stood at 314. Most of the sick units belonged to industries in the fields of basic metals, electrical machinery, food, machinery, miscellaneous chemicals, paper and textiles. Most of these units are located in eight states viz. Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, Tamil Nadu, Uttar Pdadesh and West Bengal.

Energy forest for each village !

M. C. Kodli

Majority of the population in the rural areas cannot afford commercial energy like oil, coal and electricity. The only source of cheap energy for them is the fuel wood. The creation of energy-forest for each village, therefore, seems to be the only alternative for the rural energy problem, suggests the author.

EVER SINCE THE BEGINNING of civilization, man has been using energy in one form or the other in his productive effort. Man's consumption of energy has increased very fast after the industrial revolution. And in recent years, we find an enormous consumption of energy in the world. However, the per capita consumption of energy is not uniform in all the countries. We find a lot of difference in per capita consumption of energy in different countries. In fact, there is a close relation between the per capita gross national product and the per capita energy consumption for the nations of the world. Developing nations and particularly India are at the bottom of the ladder in the energy consumption and the indsutrially advanced countries at the top.

The early resources

Energy is obtained by exploiting a wide variety of resources. In primitive times, energy resources were the food which man could eat and thus convert it into muscular energy. Primitive man was saved from an energy shortage by technological progress. After the invention of fire, the trees became sources of energy. Later on man started using animals to provide their muscular energy for him. More technological progress brought the use of wind and water power and the utilization of coal for raising steam. In the very recent past man has gained access to oil and electricity produced from nuclear fission. In the course of this developement per capita consumption of energy has risen tremendously. The energy resources available in India are coal, oil, natural gas, hydro-electric potential and nuclear fissile material. These are called commercial sources of energy. In additon, large quantities of non-commercial energy sources like fire-wood, cow-dung, and vegetable waste are used in the rural areas. We can also mention the non-conventional sources of energy like solar energy, tidal power, wind power and geo-thermal energy.

Growing energy needs

India's energy problem should be viewed in the context of the 75 per cent of its population living in villages. The rural population in India has been increasing in absolute numbers. At present, out of nearly 70 crores population more than 50 crores are living in the rural areas of our country. We can expect the rural population to increase at an annual rate of nearly 2 per cent. The energy requirements of the rural masses are met largely by non-commercial energy sources like fuel wood, agricultural waste, cow-dung. A small quantity of electricity is used in rural areas to run pumpsets. Similarly, a small quantity of diesel is used to drive tractors and pumpsets.

But large mass of people in the rural areas still depend on non-commercial sources. The increase in population and attendent deforestation has worsened the rural energy problem.

We have also to keep in mind that 50 per cent of the rural population in India live below the poverty line. These people have very little purchasing power and therefore they cannot afford energy which is expensive. Therefore any solution to the rural energy problem should be thought of in the light of this fact.

(Continued on page 13)



A policy perspective for forestry

C. S. Vedant

In order to save the country from ecological disaster through destruction of our forests the efforts of the government must be directed towards breaking the excessive dependence of rural people on forests by providing alternatives, says the author. And he adds, all our efforts should be directed to achieve this goal and to prevent further destruction of our forests.

ONE OF THE MAIN causes of the disaster that has struck Ethiopia recently is stated to be the extensive destruction of forests during the last 50 years. The forest area is reported to have diminished from over 50 per cent of the geographic area to less than 3 per cent during this period. Severe soil erosion has greatly diminished the productive capacity of agricultural land in Ethiopia. This is a clear warning to all developing countries that more importance must be attached to forestry than is being done now if they want to stave off a similar disaster. The price to be paid for the neglect of forestry should shake everyone out of complacency.

Things may come to a similar pass in India also, as in the past few decades an era of industrialization, extension of agriculture and growth of population has led to extensive destruction of forests. Even the remaining vestiges of forests are heavily burdened with rights and privileges to the local inhabitants. However, it is now evident that an awareness has been created in the minds of authorities as well as the people about the dangers of destruction of forest ecosystems. Even the ordinary villager is today more aware of the consequences of destruction of forests than he ever was, though he may not be contributing much to the prevention of such destruction. He is helpless today because he has to provide fodder for his animals and fuel for his home. The efforts of the government must be directed towards breaking the excessive dependence of rural people on forests by providing alternatives. The country must concentrate all its resources towards this goal. Unless this is done, the destruction of our forests will continue unabated.

Animal husbandry and pasture development

Rural people are dependent on forests mainly for their requirements of fodder and fuel. There are more animals grazing forest and other community lands than these lands can carry. Consequently there is a steady decline in the quality and quantity of fodder available for the grazing animals from these lands. Therefore the animals become underfed and less productive. The farmer is further forced to have a larger herd to maintain the overall productivity. This vicious circle is very difficult to break.

In our country farmers maintain large herds of cattle mostly for manure. These cattle hardly produce any milk. Time and again the problem of overgrazing has been discussed in the working plans for management of forests. It has often been suggested that heavy grazing fees should be levied so that farmers would be discouraged from maintaining unproductive cattle. But such steps are unpalatable to the people, who pressurize the government through their elected representatives from taking such steps. In some states grazing fee has been totally abolished and so the forester is powerless even to regulate grazing in forest and other pasture lands.

Soil compaction due to trampling by cattle, opening up of the forest canopy by right holders (due to indiscriminate felling of trees for fuel and in the past for timber) and introduction of fire have changed the

characteristics of evergreen and semievergreen forests of the Western ghats in Karnataka. Today certain valuable evergreen tree species like Dysoxylon malabaricum (white cedar), Vateria indica (Sal Dhupa) etc. are not regenerating naturally. Weeds (like Strobilanthes) which have invaded the forest floor have made natural regeneration more difficult. If this trend continues these species may well become extinct Karnataka Forest Department has launched schemes for raising seedlings of such rare species in nurseries and planting them in evergreen and semievergreen forests where regeneration of these species is deficient Only limited success has been obtained from such schemes for the simple reason that so long as nothing concrete is done to reduce the pressure of right holders for fodder, fuel and timber, these schemes will achieve little.

To remedy this situation it is necessary that a programme of education in better animal husbandry practices and scientific management of grass lands and pastures be launched. These two programmes should be coordinated so as to achieve the aims of reducing the number of unwanted and unproductive cattle that compete for scarce fodder resources, improving the quality and productivity of grass lands and finally genetic improvement of cattle breed Further increase in the number of unproductive cattle must be prevented by sterilization of inferior cattle.

A number of schemes that aim at cattle breed improvement and increasing the productivity of degraded grass lands and pastures are already being implemented under the Integrated Rural Development Programme (IRDP) and Drought Prone Areas Programme (DPAP) in the country. Nutritious high perennial grasses like Cenchrus ciliaris, C setigerus etc and exotic legumes like Stylosanthes hamata (a native of Australia) have been introduced in many parts of the country

These programmes are going ahead in water tight compartments without a coordinated approach At times it is not uncommon to see sheep and goats being distributed by an agency under certain schemes in well forested areas also and these animals are natural enemies of forests. This happens because each agency involved in rural development programme considers itself an unimpeachable authority within its field These problems could be tackled if a master plan for development is prepared for every district after deep deliberations by all the agencies concerned

Grazing regulations

Efficient pasture and grass land management requires strict regulation of grazing in accordance with the carrying capacity of the land. Deferred and rotational grazing must be adopted to prevent the natural replacement of nutritious and palatable species of grasses by coarse and unpalatable species. It will be difficult to enforce the adoption of these grazing practices as long as people are ignorant about the ill effects of overgrazing on grass lands. A large force of motivated extension workers will be required to educate them. It is also doubtful whether just education of the villagers about the ill effects of overgrazing will make them adopt some form of regulated grazing. Certain incentives would be necessary to make them adopt these measures.

Added to these basic problems is the gradual reduction in the extent of pasture and grazing lands. There is an immense pressure on the government to allot pasture and grazing lands to landless people for agriculture. These lands are also being diverted for other than agricultural purposes, namely development projects. In this system such pressures can not be easily resisted. But it is necessary to see that in the interest of meeting the needs of the people the long term interests of the nation are not sacrificed We can not afford to become sentimental over such vital issues The nation must be saved from an ecological disaster.

Smokeless chulhas

Somokeless chullas have been found to improve the fuel efficiency (the percentage of heat produced that is usefully utilised is called fuel efficiency) upto 50 per cent as compared to ordinary chulhas which have a fuel efficiency of only 15 per cent. Upto 50 per cent savings in fuel has been achieved from properly designed smokeless chulhas. The possibilities opened up by this simple device, which can be constructed by investing less than Rs. 400|- is immense.

The consumption of fuel wood in the country is about 3800 kgs per household per annum. If 50 per cent saving of fuel wood can be achieved by using the smokeless chulha, the quantity of fuel wood saved per annum by one household would be 1900 kgs which would be approximately equivalent to 40 medium sized trees. Forest resources not being evenly distributed throghout the country are the main sources of fuel in forested regions In regions devoid of forests agricultural wastes, brushwood from woody weeds, cowdung etc. form the fuel sources. Consequently only a part of the rural population is actually dependent on fuel wood obtained from forests. Thus a programme of distribution of smokeless chulhas free of cost covering those living in the vicinity of forests woud help in reducing the pressure on the forests besides enabling the rural woman to save time on collection of fuel

Gobar gas plants

Gobar gas plants have brought about a revolution in the concept of efficient use and disposal of farm wastes. Government sponsored programmes provide subsidies but the incapacity of the average farmer to invest even two to three thousand rupees is perhaps the only reason why gobar gas plants are not very common in villages even if the average villager is aware of the benefits of gobar gas plants.

Huge investments have been made on power projects in India. But these projects are dogged by problems of non-availability of raw materials, inefficiency

of workers and managers and obsolescence of equipment resulting in heavy losses. The country is being forced to divert a large part of its precious resources for bringing the deficits generated by these plants.

In the light of our experience with such investments it might be necessary to divert more money for providing gobar gas plants at full subsidy to rural farmers. The gobar gas plants being individual enterprises will be put to effective use and in the long run the country may save a great deal by its reduced dependence on high investment economics. The country may then turn the corner and move towards true self reliance in the Gandhian sense.

Need for a multidisciplinary approach

There is no shortcoming in the technical competence of the forester, but it is the other factors beyond the forester's control that affect forests the most. It is also necessary to understand that forestry can not succeed in isolation. If the forester's efforts are to yield results then a multi-disciplinary approach to the basic problems facing forestry is a must. Otherwise depredation of our forests will continue and that would be the greatest tragedy for all of us. □

(Continued from page 9)

Rural electrification

Rural electrification cannot be a solution to the rural energy problem. However, this does not mean that rural electrification programmes should be given up. Elecrification of rural areas is necessary in order to increase agricultural production and create more employment opportunities in the rural areas by starting small scale and cottage industries. There is a tremendous increase in the number of pump sets which have been energised in Karnataka in the last 10 years Electricity naturally provides the cheapest energy for pump sets. This, of course, benefits the big farmers and medium farmers more than the small and marginal farmers Rural electrification is also necesary if we want to generate more employment opportunities in the rural areas of our country. In India, we want industrialisation but not urbanisation. In the west, industrialisation and urbanisation went hand in hand In India large scale urbanisation is not possible as in the west. Therefore, instead of taking the rural labour to urban areas, we want to take industries to rural areas. If this happens rural surplus labour can be employed outside the agricultural sector and remain within the rural area. For this purpose rural electrification is necessary.

But electricity cannot be used as a source of energy for domestic purposes by a large section of the rural masses, for these people cannot afford electrification of their houses. In Karnataka even though 80 per cent of the villages are electrified a few people use electricity even for lighting purposes. Therefore, under the given economic condition of the majority of rural population, electricity cannot be a source of energy.

Bio-gas plants

Another alternative to rural energy problem that is often suggested is construction of bio-gas plant in the rural areas. It is important to note here that construction of a bio-gas plant costs roughly ten thousand rupees. Even assuming 50 per cent subsidy by the government, very few families in the villages can afford to invest up to 5 thousand rupees to construct a bio-gas plant The maintenance of the bio-gas plant requires at least 2 to 3 cattle in a family Therefore only big and medium farmers can afford to invest and maintain bio-gas plants. The small and marginal farmers and the landless agricultural labourers cannot afford to invest upto 5 thousand rupees to construct bio-gas plants and maintaining them is difficult under the present atmosphere in the villages. Therefore, even the bio-gas plant cannot be a solution to the rural energy problem The bio-gas plants have not been popular in the villages and even the families, who can afford to invest in them, have not gone in for them on a large scale.

Energy forest

The source of energy provided to the majority of people should be cheap and it should not involve much investment in terms of equipment. From this point of view, plantation of quick-growing varieties of trees in the waste land around the village seems to be a practicable solution. If we provide cheap fuel wood to the villagers they do not have to spend anything on equipment as they can use fuel wood in their earthen 'chulhas'. One can develop more fuel efficient 'chulhas'. The potters in the village can manufacture such 'chulhas'.

The quick growing varieties of trees like casurina and euclyptus can be planted in the waste lands around the village. It is estimated that planting of quick-growing varieties of trees with an 8 year cycle in 7.4 hectares of land can meet the energy needs of a village of about 500 persons at the level of per capita consumption of one kwh of energy per day. The fuel wood from such an energy forest can be rationed among the village population. Any extra energy they need they can buy from the market. Such energy forests alone can meet the energy requirements of the poor people in the village.

The non-conventional energy sources

The non-conventional energy sources like solar energy, wind energy and tidal power are still in the initial stages of development and they cannot meet the energy requirements of common man in the rural areas. At the preset stage of development, solar energy is costly. Unless there is a technological breakthrough which makes it very cheap, it canont be a basis of our energy policy for rural masses. Similarly, wind power and tidal power can meet the energy requirements of specific jobs and, therefore, for the common man in the village they are not relevant at all.

(Continued on page 23)

P.M. calls for stringent financial discipline

IN HIS OPENING ADDRESS to the Planning Commission on 7th February, 1985 the Prime Minister, Shri Rajiv Gandhi, said that our peoples' hopes and aspirations had been greatly raised following the recent general elections and it was the task of our planning processes to fulfil in substantial measure those hopes and aspirations. The Prime Minister stated that development had a key role in maintaining the unity and integrity of our country. We had to move fast and he was confident that our people would co-operate with the Government in the national task of reconstruction and development.

Basic objectives

The Prime Minister went on to add that the basic objectives of Indian planning—removal of poverty. modernisation and attainment of self-reliance—still remain valid. However, we must be prepared to look at specific policies and programmes in the light of contemporary realities and we should not hesitate to change our thinking if such a change would result in faster progress towards the achievement of our goals. The Prime Minister stated that while Government had undoubtedly an important role to play in accelerating the tempo of development, we must also provide adequate outlets for exercise of individual initiative. The Prime Minister emphasized that in our planning processes we must have a long range vision and perspective going at least to the year 1995 or 2001. The planning process must assist in creating an environment whereby our people could think ahead. In planning for infrastructure, such as transport and communications, it was particularly necessary to have a long range perspective. A similar long-term perspective was also needed in planning for technical upgradation, industrial development, trade promotion and in promoting scientific land-use. Referring to the problem of unemployment, the Prime Minister stated that although modern industry offered limited opportunities for direct employment, there was considerable scope for additional employment if our information and service industries were properly planned and developed. He specifically mentioned the spin-off in terms of employment resulting from the growth of electronics. The Prime Minister went on to add that if we were to take advantage of these new opportunities, we would need to re-design our educational system.

Primacy of agriculture

The Prime Minister laid emphasis on the important role of agriculture in our national economy and stressed the need for accelerating the production of rice, coarse grains, oilseeds and pulses. The Prime Minister added that farmers must have an adequate incentive to produce more of those crops which the country needed and we should avoid situations where periods of scarcity were followed by glut and overproduction. He added that agricultural price policy needed to be used more effectively for promoting a balanced land-use pattern.

Resourses

Referring to the resources for the Seventh Plan, the Prime Minister stated that the resource position was undoubtedly very tight. However, it would be wrong to respond to this situation by cutting our Plans. What we needed was more stringent financial discipline, cutting out wasteful expenditure, insistence on efficient collection of taxes, and working towards a tighter system of priorities, concentrating on a few basic and essential things and avoiding the tendency to spread resources too thinly. In this context, the Prime Minister suggested a review of the functioning of various organisations so as to ensure that purposes for which they were established still remained valid and that resources made available to them were used efficiently and productively.

Concluding his remarks, the Prime Minister stated that Indian economy had shown a tremendous resilience but there was still a vast untapped potential. The planning process must assist in harnessing all available national resources, especially the vital human resources, to accelerate the tempo of social and economic progress. This, the Prime Minister stated, was the major task for the Seventh Plan. □

Environmental impact of acid rain

Shibdas Burman

The impact of acid precipitation on the environment and human health is currently a worldwide concern. Herein the acid rain scenario in various countries is sketched with special reference to India. The author suggests the need for systematic study and research on acid rain problem. The setting up of several super thermal power plants in the country is commented upon adversely from strategic and environmental considerations.

ACID RAIN IS THE environmental pollution resulting mostly from thermal power generation from coal. The acidification of the environment, especially in the developed countries, has been going on for the last several decades. As early as 1970 Alvin M. Weinberg reported that the rain in some parts of Sweden to be about as acid as Coca-Cola, PH-2 5 This acidity is attributed to the oxides of sulfur that belch out of England's and northern European industries and are carried to Sweden. The emissions from motor vehicles have added to the environmental pollution.

The main acidifying atmospheric pollution arising from human activities are sulfur dioxide (SO_2) and nitrogen oxides (NO_x). Averaged over the surface of the globe, man-made and natural emissions of SO_2 (and its precursors) are of comparable magnitudes, on the order of 100 million tonnes of sulfur per year each. The bulk of man-made emissions occurs over industrialized regions covering less than five per cent of the earth's surface : Europe, eastern North America, China-Japan. Within these regions man-made sulfur emissions exceed the natural emissions by at least a factor of five.

Acid rain in the last couple of years has become a topic of importance. The monster does not recognise national boundaries, nor even the division between East and West. Twenty per cent of all lakes in Sweden are highly acidic. Six per cent of all lakes in wild Ontario are affected and downwind from Sudbury Smelter 19 lakes have no fish Nova Scotia has lost much of its salmon spawning. Half of the more acid lakes in southern Norway have no fish at all.

Effect of soil

Sandy, well-drained soils of intermediate pH (5.6) are particularly susceptible to acidification. Soil acidification is a slow process. There are only a few field studies demonstrating soil acidification due to atmospheric deposition. Effects should be detected over a 10-50 year period.

The areas most susceptible to water acidification contain shallow acid soils overlying granitic rocks, or highly weathered sandy soils. Continual high inputs of acid deposition will lead to reduced neutralization capacity in susceptible soils, and hence, to further fresh water acidification. The Table below gives the classification of rock formations according to their ability to neutralize acid :

Table 1

Classification of rock formations according to their ability to neutralize acid

Type I—	Low or no buffering capacity, overlying waters ver sensitive to acidification (granite/syenite, granitic gneisses, quartz sandstones, or equivalents).
Type II	Medium to low buffering capacity, acidification restricted to first and second order streams and small lakes (sandstones, shales, conglomerates, high grade metamorphic to intermediate volcanic rocks, intermediate igneous rocks, calc-silicate gneisses).

The views expressed are that of the author.

Type III High to medium buffering capacity, no acidification except in cases of overland runoff in areas of frozen ground (slightly calcareous, low grade intermediate to mafic volcanic, ultramafic, glassy volcanic rocks).

Type IV "Infinite" buffering capacity, no acid precipitation effect of any kind (highly fossiliferous sediments, of metamorphic equivalents, limestones, dolostones).

There had been views that the ambient sulfur dioxide and acid deposition may be damaging trees in West Germany and other parts of Central Europe. The experts' meeting in 1982 in Stockholm on the acidification of the environment produced a consensus report on this and summarized it as follows : "The recently reported forest damage in an estimated one million hectares of Central Europe seems to be related to (among others) the direct effects of gaseous pollutants and soil impoverishment, and toxicity arising from very large amounts of wet and dry deposition."

Some experiments suggest that acid rain can be good for plants : since it tends to kill diseases like brown rust and mildew, it can improve growth rates.

A recent report from America's National Science Foundation suggested that the relationship between sulfur-dioxide emissions and damage to the environment is clear-cut, a meeting in September at Britain's Royal Society, suggested that the matter is far from settled. There was no agreement on how much damage is being done, what is causing it and so on what benefits can be expected from which controls.

One of the problems is that three different sorts of emissions have been under investigation. Sulfur dioxide, nitrogen oxides and ozone are all suspected of causing damage—perhaps by themselves, perhaps interacting with each other. Since sulfur dioxide comes largely from coal-fired power stations, and nitrogen oxides and ozones are primarily products of car emissions, preferred policy measures depend on which is blamed.

Sulfur dioxide is, on the whole, the favoured culprit, though some think it is worse in combination with nitrogen oxides. (Others hold that nitrogen oxides can actually be beneficial, since they turn into nitrates which can fertilise soil). Then there is the ozone school, which holds that, while the other two emissions weaken plants, the real damage is done by the action of ozone on cell membrances. Man-made ozone (as opposed to the natural variety, which stays in the upper atmosphere mostly, 20 km—25 km above the earth's surface) results from the effect of bright sunshine on hydro-carbons.

Effect on fish

Fish probably die (or, rather, fail to reproduce) as a direct result of acid in their water. A number of studies have been done correlating changes in the pH levels of American lakes over two decades and the corresponding disappearance of fish, the least acid-tolerant species first. Some species fail to reproduce in water whose acidity is only around pH 6—lower than ordinary rainwater.

Plants are more complex. It is not so much the acid itself that matters, as its effect on the soil. Acid causes valuable nutrients to leach downwards, out of the reach of plants. It also frees toxic substances, particularly aluminium, from the complex molecules which bind them. Thus, the damage that acid rain does to plants will depend very much on the sort of soil in which they grow.

Calcium-rich soil

Plants will suffer relatively little from increased acid deposition, because calcium neutralises acidity.

Nutrient-rich soil

If there are plently of nutrients around, the loss of some of them will not much affect plant growth. Conversely, plants growing on soils low in nutrients will quickly feel the effects of acidification. This is probably why forests, in particular, suffer : they are usually there in the first place because the soil is too poor to use for agriculture.

Aluminium-rich soil

This type is particularly dangerous : aluminium let loose by acid deposition can poison plant cell. But aluminium chemistry is complex. The stuff is dangerous only in certain forms and nobody quite knows how it gets transformed into these forms.

Once enough is known about the effect of acid on different soils, it should be possible to pinpoint areas most in need of help. Remedial measures, like spreading acid-neutralising lime, could then be taken. This has already been tried in Scandinavian lakes : burgeoning fish populations in many treated lakes have shown that it can be effective.

Spreading lime is both costly and is a short-term measure. Emissions reduction would be more promising.

The Royal Society, London, in conjunction with its Norwegian and Swedish counterparts, has embarked on a 5 year study costing £ 5 million ($ 7.5 million) of the contentious problem of acid rain in northern Europe.

In the USA the Reagan administration has taken the position that a sulfur-dioxide control programme is premature, given the controversy about acid rain and the considerable damage which might be done by dry deposition of sulphates, nitrates and sulphur-dioxide gas as done by acid rain, infuriating Canada in the process. Some scientists agree with the Reagan administration that it would be prudent to await at least some of the results before requiring expensive emissions controls. Most scientists, however, agree that sulfur dioxide emissions will eventually have to be reduced and that such a programme will take years to

plan and execute. So, environmentalists argue that prudence means getting going before irreversible damage occurs.

An international conference on acid precipitation was held in Lindau, FRG from 7 to 9 June 198.. As a result of work on ion exchange in soil and fresh water, queried many of the generally accepted results, and showed that acidification was often dependent on changes in land use rather than on precipitation. He showed that the phenomenon of acidification was not new, and incidents had occurred long before the outputs of oxides of sulfur and nitrogen from industry reached the present levels.

In the People's Republic of China air pollution associated with coal combustion has been recognised as an evironmental problem for some time. Recently, studies concerning emissions and concentrations of SO_2 in the atmosphere and pH in rainwater have been carried out, covering a large number of places in China. The total SO_2 emission in China is estimated to be about 15 million metric tonnes per year. Out of that, 85 per cent comes from coal combustion. The sulfur content in coal varies from 0.5—5 per cent with an average of between 2 and 3 per cent. The ash content of the sulfur-rich coal is high.

In most of northern and central China rainwater has a pH of 7.0—7.5. In the Beijing area the pH is 5.0—5.5. In southern China, where the soil in general is acidic and the particle content in air is much lower, the pH of rain is 4.5—5.5.

In West Germany, a government committee, Der rat von Pachverstandigen fur Umweltf.agen, has now stressed that the phenomenon of acid rain and environmental pollution "can no longer be explained on the basis of traditional forest experience", but that acid air pollution must be an important contributory cause. There are now fears that air pollution is increasing mortality among the vulnerable trees—the old and the very young. Mortality among the young may be especially severe in West Germany, which now has the lowest success rate for new trees in the world. The country is well on its way to leading the European Economic Community (EEC) in environmental legislation. The reason is the growing anxiety about the condition of its forests.

Health effects

The table 2 shows the effects associated by the U.S. Public Health Service with SO_2 and particulate concentrations in the air. The adverse health effects are associated with SO_2 concentrations of 115 ug|m³ (annual average), or 300 ug|m³ (24-hour average) for three to four days.

In the USA, the acid rain review panel appointed by the White House Office of Science and Technology (OSTP) chaired by William A. Nierenberg released a summary of their report on June 28, 1983. It begins by saying that emissions of sulfur dioxide (SO_2) and nitrogen oxides (NOx) have increased the acidity of natural rainfall and that "additional steps (beyond to those mandated by the Clean Air Act) should be taken now which will result in meaningful reduction in the emissions of sulfur compounds into the atmosphere, beginning with those steps which are most cost effective in reducing total deposition". The report notes that

Table 2

Some Observed Health Effects of SO_2 and Particulars

Concentration of SO_2		Concentration of Particulates		
ug/m³	Measured as	ug/m³	Measured as	Possible Effect
1500	24-hr average			Increased mortality
715	24-hr mean	750	24-hr mean	Increased daily death rate ; sharp rise in illness rates among bronchitics over age 54.
300-500	24 hr mean	Low	24-hr mean	Increased hospital admissions of elderly respiratory disease cases; increased absenteeism among older workers.
600	24-hr mean	300	24-hr mean	Symptoms of chronic lung disease cases accentuated.
105-265	Annual mean	185	Annual mean	Increased frequency of respiratory symptoms and lung disease.
120	Annual mean	100	Annual Mean	Increased frequency and severity of respiratory diseases among school-children.
115	Annual mean	160	Annual mean	Increased mortality from bronchitis and lung cancer.

some effects of acid deposition might be irreversible and cause ecological damage. A later report about acid rain was prepared by the National Academy of Sciences (USA). The NAS report agrees with the OSTP summary in saying that on a regional scale, natural sources cannot account for current ambient concentrations of pollutants such as SO_2 NOx, SO^2 and NO^2. The ambient standard of SO is 80 ug, m³, in contrast to WHO standard being 60—90 ug| m³. The ISI proposed standard are 60ug|m³ for the corresponding US and WHO standard being 60—90 responding US and WHO standard. It also states, like the OSTP summary, that a reduction in emissions of SO_2 will reduce the average acidity of precipitation. It goes into great detail on this point, and in the process refutes one of the major arguments of those who do not favour emission controls.

The NAS and OSTP reports about acid rain have contributed to the formation of new alliances and schisms because of the widening belief that emission controls are inevitable. In the neighbouring country Canada, a panel of the Royal Society of Canada, chaired by F. Kenneth Hare, has completed its review of the Joint U.S. Canadian acid rain documents and has reached the same conclusion as the US review panel (OSTP) : The scientific basis for action is strong enough to warrant "the prompt introduction of abatement measures". The Hare panel calls for a reduction in acid loadings (that which falls mainly as wet precipitation) to less than 20 kg per hectare per year to protect the sensitive aquatic ecosystems of eastern North America.

The Indian situation

I have made an order of magnitude calculation of the emission of SO_2 in the whole of India. It comes to about 600 mg|square meter year, taking the electrical output of power to be about 22,000 MW(e) Y due to the thermal power stations. It was further assumed that the discharge quantity per MW(e) Y of SO_2 to be 138.6×10^3 kg. (from management of Atom and Environment, the lecture article by H. N. Sethna who quoted James G. Terrill). Besides the thermal power stations, sulfur dioxide emissions are caused by other sources also, leading to further loading of the environment. The concentrations near the power stations and the industrialised regions could be as high as 1,00 mg| sq meter year the quantity will go up very much considering the ambitious programme we have to boost up coal-fired power stations in the years to come. Particular attention should be focused on regions near the super thermal power stations and to SO2 emission control measures. Already, in Bombay rainfall with an acidity of pH 3.5 has been recorded.

I take this opportunity to say a few words on the proposal to create a complex of super-thermal power stations at Singrauli. I quote below the statement.

Even if the sulfur content of Indian coal is lower than that assumed in the calculation, the situation will worsen in future with the increased tempo of thermal power generation made by T. N. Khoshoo, Department of Environment : "Each of the nearly dozen super thermal power stations (STPP) being set up around the Rihand project reservoir in Uttar Pradesh-Madhya Pradesh border areas will violate the prescribed ambient air quality standards despite the fact that coal to be mined from the Singrauli fields has low sulphur content".

From the ecological and environmental point of view it will be imprudent to set up many STPPs in Singrauli. These power stations will emit a high degree of sulfur dioxide, nitrogen oxides and other particulates and trace elements which will harm the environment, some of the effects of which may be irreversible. Besides, coal has radioactivity associated with it. Most of the radioactivity content in the coal (more than 90 per cent) is in the ash that is disposed of from the thermal stations. The disposal of flyash generated at Singrauli, with associated radioactivity, will be an extremely difficult proposition. The concentration of a host of STPPs here is also not advisable from the strategic point of view.

Bazle Karim, referring to the pollution hazards has said that less stringent environmental laws helped India compete in the international market for industrial products. However, continued he, a balance had to be struck between environmental laws and economic viability of industrial plants.

In conclusion, I would like to stress the need to carry out research and field studies on the problem of acid rain in India. In addition, there is need to effect emission reduction over the next few years. The proposal to set up a host of super thermal power stations at Singruali should be re-examined in view of what have been stated above.

In a personal communication to this author the world renowend scientist, Julian Huxley said : "During education at all stages, stress should be laid on biological science, notably physiology and its applications in regard to health, and ecology and its applications in regard to conservation and land use, rather than on physics and chemistry and their application in technology." This, in sum, should guide our planners. □

Oral rehydration saves more lives

The number of deaths caused by diarrhoeal diseases or dehydration has come down substantially during the last five years following the implementation of various diseases control programmes especially the application of rehyderation therapy. The number of deaths came down from 7,339 in 1980 to 4888 during 1984 (provisional).

The highest incidence of the disease was during 1982 whereas the maximum deaths occured during 1981. The incidence reported during 1982 was 1,28,20,495 with 8,071 deaths. 8,576 people died in 1981.

The Ministry of Health and Family Welfare has undertaken a national programme for control of diarrhoeal diseases to bring down further the mortality rate due to this disease step by step. The targets fixed are 15 per cent by 1986, 20 per cent by 1987, 30 per cent by 1988, 40 per cent by 1989 and 50 per cent by 1990.

The main thrust of the programme is the widespread application of Oral Rehydration Therapy at the community level by training and posting more para-medical personnel. The greater emphasis is being given to the provision of safe drinking water as this disease is mainly water borne. □

TOWARDS SOCIAL REVOLUTION
a Case for Economic Democracy - VASANT SATHE

A Serialisation 14

National marketing organisation

MARKETING IS THE CRUX of economic activity. Goods may be produced, but unless there is a demand for them and unless the people who want them can acquire them, economic activity will have little meaning.

Classical theorists have believed that left to itself, the law of demand and supply would so operate in the market that production would automatically be balanced with demand. But as we have seen earlier, the famous principle of 'other things being equal' operates, more often than not, in logic and not in actual practice. Demand and supply are both regulated and curtailed artificially according to the motive for quick profits that can accrue to those who control the productive and distributive activities. Consequently, all the liberal intentions of equity, justice and the law of demand and supply operating freely to bring about equilibrium are forgotten. In actual practice, economic activity becomes the game of the unscrupulous and this game is justified and even eulogised in the name of legitimate business principles where in no holds are barred. Thus, we see total distortions in the economic activity, both internally as well as internationally.

A sound distributive mechanism is thus essential. It should be so organised and regulated that while ensuring a fair return to those who engage their labour and energy in providing distributive services, it should automatically ensure a fair deal also to the consumer. In the process, it must ensure the distribution of goods produced and services rendered in the unorganised, self-employed private sector spread throughout the country, because it is only through such an assurance that productive activity in the decentralised sphere can be sustained.

It is, therefore, proposed that marketing activity must be properly organised throughout the country. In the organised sector of marketing, the same principle of proportional participation in management should hold good. At the national level, there sould be a national marketing organisation (NMO) to which all institutions or persons engaged in marketing, both at the wholesale level and at the retail level, must belong. They would also have on this body representatives of the people appointed through the financial institutions in the same manner as in the case of the productive sector. The NMO would also consist of the representatives of the employees engaged in the organised sector and also those of the producers. It is this national marketing organisation which should annually fix the prices of essential commodities as to ensure remunerative returns to the farmers with the clear objectives of treating agriculture as an industry and applying the same principles of pricing for increasing productive and purchasing power at the rural level, where a majority of our population lives. Having achieved this objective, the NMO should be able to fix fair returns at the wholesale level as well as the retail level. The entire economic activity of the nation, i.e., comprising every individual member of society, is a matter of concern to the whole society and must therefore come under one national organisation. Further, there should not be any dichotomy between the so-called private sector and the public sector. The entire activity is a national activity and therefore belongs to a national sector and must abide by a common code of discipline evolved by the members engaged in the activity.

For example, let us take the most essential commodity : foodgrains. In the national marketing set-up, it is well known that because of the larger and faster turnover, the margin of profit at which trading in foodgrains operates at the wholesale level is about 1 per cent to 1.5 per cent and at the retail level it

is about 3 per cent to 4 per cent. At both these levels, trading activities include transportation, packing and storage. Now, even if at the wholesale level the return is fixed at 2 per cent and, at the retail level, increased up to 5 per cent, and if, to ensure a remunerative price to the producer of wheat, we decide to give Rs. 200 for a quintal, after having given a fair return to the trader at the last retail point, wheat should be available at a maximum price of Rs. 220 per quintal, that is, Rs. 2.20 per kg.

It shall be the duty of the NMO then to regulate the prices and to ensure that all the members engaged in the trading activity, whether at the wholesale level or at the retail level, abide by the prices thus fixed.

Further, every member engaged in trading, again, whether at the wholesale level or at the retail level, shall, by law, be required to be a licensed member of the NMO. Any member who violates the rules of the NMO with regard to prices would be liable to penalisation even to the extent of being delicensed.

The duty of the government and of the law and order machinery would be only to ensure that the people engaged in trading activity conform to the norms, both in terms of pricing and quality, prescribed by the NMO. The expeditious machinery of people's tribunal should be created by law to take summary measures against persons engaged in trading or marketing activity who commit social crimes such as hoarding, adulteration and black marketing.

The whole concept of setting up fair price shops by taking over distribution as a governmental activity is basically a wrong one. It is an eye-wash, not socialism. The so-called nationalisation which, in fact, means only bureaucratisation, has led only to greater inefficiency and distortion and although gilded by the high-sounding terms, i.e., public sector and socialism, it has only become statism and a misnomer for any social welfare concept. The right method of ensuring both economic justice and the creation of an equalitarian system is to regulate the total economic activity of all members of society by a self-operating, in-built mechanism which prevents the exploitation of one section by another. The duty of the government which believes in democracy and the welfare concept should be (1) to ensure that the economic activity operates within the given parameters and (2) to deal with violations of these norms by one section or another, firmly and strictly, as the worst form of social crime. In brief, the concept must be that, having provided a fair return to himself, any member engaged in economic activity who violates the norms and the code of discipline, is, in fact, a thief and deserves to be dealt with as such.

Then again, in practice, the wholesale trading community which has been operating for generations is itself so large and has developed such an expertise that it will only be a wasteful exercise to want to replace it by a bureaucratic machinery consisting mostly of people who have no knowledge or expertise of the trading field. Moreover, the creation of such a machinery would require a heavy investment of public money by the government. It is common knowledge that the overheads in the foodgrains sector, which is controlled by the Food Corporation of India (FCI), are extraordinarily high. The other areas of leakage are too well known to be commented upon. Like the public sector in the productive field, the distributive sector also gets identified with the government, and it becomes the duty of the party in power to defend this 'holy cow' also. It is high time we really set down to take stock of the situation and examined the philosophical, ideological and practical aspects of our economic policy.

The same is true in the case of retail trade also. The number of people engaged in this trade throughout the country, spread out in the remotest areas and in every village, runs into millions. To think of substituting these retailers by the so-called fair price shops is *prima facie* an irrational concept because of its sheer impossibility. Further, it is common knowledge that the responsibility for running the fair price shops is given to those people who seldom know anything about the retail trading activity. From these fair price shops, goods supplied at subsidised rates, if they are of a good quality, pass off into the hands of other traders and this leads not only to heart burning and corruption but also to suffering for a large number of people who are forced to stand in long queues. All malpractices are avoidable if it becomes the mandatory duty of members already engaged in wholesale and retail trade to make the service of commerce and distribution available to the rest of the members of society in a fair manner. If they do not want to do so, then, society must deny them the right to be engaged in trading itself.

In a national marketing organisation like the proposed NMO, the government as the biggest organised sector itself provides a large market for various types of goods. And if we decide on a policy that the goods produced by the self-employed private sector in the rural areas would have to be marketed and the government, as the biggest buyer, itself decides to give preference to these goods, it would automatically encourage the spread of purchasing power, the sustenance of productive activity and employment to a large number of people spread out in the rural areas. If the main objective of the entire marketing and distributive mechanism is to make the exchange of goods and services possible to all those who need them, then it should not be difficult for the NMO to organise the distribution and, thus, also influence the sustained production of goods according to the needs of the whole country. Thus, the emphasis would shift to converting the needs into a market

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Chemicals—friends or foes?

Subhash J. Rele

While emphasising the multiple use of chemicals in today's life style of man, the author discusses the health hazards from toxic exposures of various chemicals affecting lungs and other aspects of human health. He suggests both preventive and protective measures for workers in the chemical industry.

THE USE OF CHEMICALS in practically every aspect of life has grown rapidly over the last two to three decades. Along with this has grown the concern about the possible health hazards that may arise from exposure to chemicals.

At present, it is estimated that there are some 50,000 chemicals in daily use. Each year over 500 to 1,000 new chemicals are added to the existing stock. It is no longer a secret that potentially long-term health hazards are faced by workers who are exposed to chemical substances on the job. And their numbers are increasing as industrial production processes are becoming more dependent on the use of chemicals.

International trade in bulk chemicals has also burgeoned, making imperative the need for continuous review and reappraisal of procedures for evaluating their safety. One may not always be able to get full information on hazards caused by a chemical because many chemicals have never been fully tested. Sometimes, hazards have been discovered only after cases of poisoning among workers have been detected.

A recent WHO report points out that there is no generally agreed definition of "hazard" associated with a chemical, but the term used to indicate the likelihood that an adverse effect may be caused under the conditions in which it is prepared or used.

Adverse effect

Enough mass of evidence has surfaced recently to suggest that some chemicals are environmental carcinogenic agents and have extraordinary potency to induce cancers in man and animals after exposure to very small doses. Changes and developments in industrial processes, the development of new chemicals and changes in the use of existing chemicals lead to new and increased hazards.

The risk of cancer is very high among workers having contact with certain toxic chemicals. Investigations have disclosed that chemists and anaesthesiologists suffer unusually often from cancers of the blood forming organs, while furniture makers have an excessive liability to cancer of the nasal cavity, possibly induced by some natural carcinogenic factors in the dust from the exotic woods which they inhale. Breast cancer is most frequent among luminous dial painters ingesting the radio-active paint by licking the brushes with which they apply the paint. A recent report revealed that some workers engaged in the manufacture of synthetic glucocorticoids from adrenocortical suppression due to chronic absorption of the corticoid by the workers. In this case all the twelve men exposed to this corticoid had facial plethora.

Some very highly toxic chemicals like carbon disulphide, acetic acid, dimethyl-terephthalate (DMT), ethylene, glycol and caprolactum find extensive use in the man-made fibre industry. These chemicals are known to pose occupational health problems because of work environment. Carbon disulphide, an impor-

tant basic chemical for viscose rayon industry because of its high volatility and toxicity, poses work environment problem leading to health hazard due to excessive exposure of persons to it.

Continued exposure to high levels of its vapours is known to affect worker's central nervous system, elevate systolic and diastolic blood pressure and ultimately result in coronary heart diseases. Recently, in order to assess the inplant pollution due to carbon disulphide and its impact, the Central Labour Institute, Bombay, conducted a multi-disciplinary study in a viscose rayon plant wherein the environmetal bio-chemical and medical aspects were investigated.

It is evident from the data that the average concentration of CS_2 at certain locations in the plant was higher than the acceptable level. Out of the 120 workers clinically examined, a few workers complained of mild symptoms such as pain in the chest, weakness in the lower limbs, sleeplessness, loss of appetite, etc. Eye irritation, sore eyes and watering in the eyes were complaints by new workers This was due to the effect of hydrogen sulphide and sulphuric acid mists present in the section. Recommendations were made to improve the work environment in the concerned sections. Machines which were found to emit pollutants in higher levels were recommended to be completely enclosed.

Highly toxic

Among chemicals, benzene is most toxic but in India it is not treated with respect it deserves. In high doses it acts on the nervous system, causing drowsiness and loss of consciousness. Exposure of a worker to a high dose can lead to chronic benzene poisoning, symptoms of which are headache, dizziness, fatigue, loss of appetite, irritability and nervousness. Benzene has been associated with leukemia in susceptible people. It has also been found to damage the chromosomes, which contain the genetic material that passes on heredity to one's children and controls the day-to-day production of material for the body.

Blood examinations of exposed workers and air samples of work areas should be taken seriously. Aromatic nitro and amino compounds are derivatives of benzene. The most outstanding effect of this group of compounds is on the haemoglobin in the blood. One symptom is a condition known as cyanosis in which the eyes, finger tips, ears and lips turn blue

Another chemical, phenol—a derivative of benzene—is dangerous to handle since it is easily absorbed through the skin. Excessive absorption can affect both the nervous and the circulatory systems. The nervous impulses that can cause breathing are also weakened and the victim often dies of respiratory failure. Acute poisoning is characterised by other nervous disorders, such as ringing in the ears, tremors and convulsions. If the victim survives, he often develops pneumonia. In India, workers in chemical plants are not fully protected. Workers should, however, see to it that they learn the safest techniques possible for handling the phenols. Excellent ventilation and general industrial hygiene are also necessary. Any skin contact should be immediately flushed with water. Since these compounds can be serious pollutants, workers should make sure that phenolic wastes are not simply dumped into the air or water.

Beryllium and its compounds used extensively during the last 40 years for various industrial purposes have given rise to the development of a specific pneumoconiosis, known as berylliosis, among workers as well as residents in the neighbourhood of these plants. This disease is frequently fatal, and those who recover may have sustained permanent damage to the lungs.

At first, the symptoms may be mild, slowly progressing to a more severe and disabling illness in which chronic inflammation makes the lungs stiff and unable to transfer oxygen to the bloodstream. The heart is affected by years of straining to pump blood through the inelastic lungs. The final stage of the disease is similar to asbestosis. More recently, several cases of coexisting berylliosis and cancer of the lung have been placed on record.

Coal tar and its fumes are poisonous. An increased tendency to develop cancer of the urinary tract has been noticed in workers having respiratory and ingestive contact with coal tar and its fumes. It is a recognised source of occupational cancer of the skin and lungs among workers. Coal tar is broken down into many chemicals. The most severe reactions come from the less volatile fractions. All coal tar fractions react with the skin and photosensitise it—that is make it more susceptible to sunlight ultraviolet radiation. Exposed parts of the body develop dermatitis.

W. C. Heuper, former chief, Environmental Cancer Section, National Cancer Institute, points out: "Occasionally, protestations are made by representatives of industry that products such as coal tar and petroleum waxes, found to be carcinogenic when made by competitors or in other countries, are actually innocuous when made at their plant. Factual records and practical experience contradict such allegations based upon profit motives or convenient ignorance". He further says, "The appearance of occupational bladder cancer in dye plant workers following the establishment of such operations in different countries, adequately supports the basic thesis. The newly created cancer risks related to the manufacture of synthetic coal tar dyes became obvious, as a rule, about 15 to 20 years after the start of such an industry".

Dye dangers

Serious problems are involved in the use of chemicals, especially those commonly encountered in the production of dyestuffs and their intermediates. These problems include sensitization for a few of the compounds and the ability to cause cancer. For years the occurrence of cancerous bladder tumours among workers involved in dye production was attributed to aniline, and the disease was commonly called aniline bladder tumour.

Extensive studies have shown that chlorine at high concentrations is markedly irritating and damaging to the skin, eyes, nose, nasal sinuses, throat, larynx and larger air tubes. It may cause chronic inflammation of the sinuses and continued hoarseness. If greater concentrations reach the lungs, pulmonary edema may result. Workers have suffered from ulcers in the centre section of the nose and on the skin, and acne and skin infections.

Industrial gases can be health hazards either because they have direct toxic effects on the body or because they take up space in the atmosphere and keep the body from getting the oxygen it needs to survive. Some gases produce both acute irritation by a single, high level exposure and chronic lung disease by repeated exposure at low levels. The nitrogen oxides are extremely irritating to the eyes and upper respiratory tract. Exposure to concentrations above the threshold limit causes cough and chest pain immediately.

Sulphur dioxide is another gas with a highly distinctive and unpleasant odour. Magnesium workers may be exposed to a large amount of this gas, since it is used to prevent oxidation of the metal. As sulphur dioxide is soluble, its main action is in the upper respiratory tract, nose, throat, wind pipe and bronchi. These tissues may swell and block the passage of air, but occasionally the air sacs also are injured and pulmonary edema results, which may be fatal. Chronic irritation of the air tubes may cause chronic bronchitis and emphysema. Long-term exposure to low levels of hydrogen sulphide may cause chronic lung disease.

Toxic exposure

The use of plastic is increasing everyday leading to an increase in occupational exposure to the toxic chemicals involved in their manufacture. Plastics are all polymers. The manufacture of plastics involves exposure to the finished product—the polymer and also to the starting materials, the monomers. In addition, it involves the use of catalysts. Dyes and filters such as asbestos, diatomite, mica and sand are used for colour and texture. There is risk of exposure to several chemicals and it is usually the stabilisers and plasticisers and the monomers that are most hazardous.

Many health hazards are involved in the manufacture of epoxides. Liquid epoxy resins are sensitizers and irritants. Not much research has been done on the toxic effects of epoxy chemicals, but it is generally conceded that they are extreme irritants and may have anesthesic and sensitizing effects. Some epoxy compounds are non-volatile and when heated, extremely irritating to upper respiratory tract, skin and eyes. They can burn the skin. If lung irritation is severe enough, they may lead to pneumonia and pulmonary edema. Ethylene oxide is extremely irritating. Skin and eye contact can cause severe burns leading to death of tissues involved. Eye contact should be scrupulously avoided and goggles should be worn. Excessive vapour can cause severe lung irritation, which can lead to lung infections.

Lung disease

Another hazardous chemical is nitric acid, which is extremely corrosive and attacks the eyes, skin and mucuous membranes. The fumes contain nitrogen dioxide, which is highly toxic. Exposure to high concentrations can lead to serious lung disease. Sulphuric acid is quite volatile when concentrated and gives off sulphur trioxide gas and sulphuric acid mist, both strongly irritating to the respiratory tract. In fact, sulphur trioxide has asphyxiating properties. In solution, it is corrosive to the skin and teeth. Acute respiratory effects are similar to those of hydrochloric acid. Lung scarring pulmonary fibrosis and emphysema may follow acute reactions.

Can workers avoid occupational diseases stemming from chemicals ? Of course, they can. Workers should be extremely cautious about exposure to chemicals. Some general hygiene standards that should be maintained are :

1. Wash-up time and showers must be provided.
2. Workers must be provided with daily clothing changes and contaminated clothes must be changed immediately.
3. Air sampling must be done frequently.
4. Workers must be given blood tests regularly for red, white and differential blood counts and must have regular urinanalyses.

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Conclusion

Majority of the population in the rural areas of our country cannot afford commercial sources of energy like oil, coal and electricity. They have to be provided with cheap energy. The only source of energy which can meet this condition is the fuel wood. Therefore, creation of energy-forest for each village seems to be the only alternative for the rural energy problem. □

Helping the handicapped

M. I. Habibullah

To mark the world day of the disabled, on third Sunday of March, this year, the author discusses herein the problems of the physically handicapped and facilities available for their rehabilitation, and calls for some more concessions for their all-round welfare.

THE HANDICAPPED ARE classified into three groups : They are : 1. the blind; 2 the orthopaedically handicapped; and 3. the deaf & dumb. The total population of the handicapped in India is seven crore according to the estimate of the United Nations.

Even before Independence, there were a few organisations for the rehabilitation of the physically handicapped persons in various parts of India. Really, the rehabilitation services to the disabled started in India in 1957. In 1957, a Special Employment Exchange was established in Bombay. This employment exchange received favourable response and, therefore, 21 more Special Employment Exchange were opened in different cities of the nation. They are : 1. Ahmedabad 2. Chandigarh 3. Bangalore 4. Calcutta 5. Chandigarh 6. Hyderabad 7. Jabalpur 8. Jaipur 9. Kanpur 10. Madras 11. Delhi 12. Patna 13. Trivandrum 14. Simla 15. Srinagar 16. Agartala 17. Bhubaneshwar 18. Gauhati 19. Madurai 20. Imphal and 21. Baroda.

As an extension to this service, to assess the vocational needs of the physically handicapped two Vocational Rehabilitation Centres for Physically Handicapped (C.R.C.), one each at Bombay & Hyderabad, were opened by the Directorate General of Employment and Training, Ministry of Labour, in June, 1968 with the co-operation of Health and Educational Department of U.S.A. These two centres also received favourable response from the physically handicapped. So 12 more V.R.C.s for the physically handicapped were opened at the various key stations of the country. They are · Ahmedabad, Bangalore, Bhubaneshwar, Calcutta, Delhi, Gauhati, Jabalpur, Kanpur, Ludhiana, Madras, Seethamarhi and Trivandrum.

Above all, the D.G E T. opened 6 Skill Training Workshops at the following stations : Bombay, Ahmedabad, Bangalore, Hyderabad, Trivandrum and Madras. These training centres impart training in certain trades like electricals, electronics, general machineries, air-conditioning, refrigeration, automobile engg., printing, book binding, arts and crafts, textiles and tailoring, secretarial practices etc.

Facilities for the disabled

Moreover, the Government of India sanctioned the following facilities for the betterment of the physically handicapped community :

(i) 3 per cent of job reservation for the handicapped : 1 per cent for the blind, 1 per cent for the orthopaedically handicapped and 1 per cent for the deaf and dumb in May 1979.

(ii) Age was relaxed upto 10 years against the normal age limit for Government jobs, in January 1978 (S|C and ST P.H. are eligible for another 5 years).

(iii) Re-canning of chairs in Government Offices are strictly reserved **only for the blind** people.

(iv) If a handicapped person is unable to type due to his disability he|she is exempted from typing test for group 'C' (Class-III) post.

(v) The Indian Railways has allowed one fourth of the normal fare for the handicapped (The Orthopaedically Handicapped should travel with an escort to avail the one fourth of travel concession) and 50 per cent travel concession in Indian Airlines for blind people are allowed.

(vi) The Delhi Transport Corporation, (D.T.C.), a Government of India Unde taking, provides free passes to the disabled in all route buses of the Union Territory of Delhi.

(vii) The Ministry of Communication, Departments of P & T has opened telephone booths for the Handicapped by charging 30 paise per call and Free postage of braille literatures for Blind.

(viii) Section 80-U of Income Tax Act, 1961 provides for a deduction of Rs. 10,000|- from the total income, if a person is either blind or is suffering from a permanent physically disability, which has the effect of reducing substantially his capacity to engage in a gainful employment or occupation. However, such deduction is allowed only if the person during his first assessment produces a certificate from the prescribed medical practitioner as the proof of his disability.

(ix) A scheme to make petrol|diesel available at concessional rates to the physically handicapped persons has been introduced since 1977. Accordingly, the physically handicapped owners of motorised vehicles are given exemption from the payment of road tax by the State Governments|Union Territory Administrations and are eligible to claim refund upto 50 per cent of the expenditure incurred by them on purchase of petrol|diesel from the recognised dealers subject to a ceiling as given below :

Vehicles below 2 horse power—15 litre per month.

Vehicles of 2 horse power—25 litre per month.

(x) The Ministry of Petroleum, has decided to earmark 15 per cent of all types of dealerships|agencies of the Public Sector oil companies for the handicapped persons.

(xi) The Government Employees are allowed Conveyance Allowances @ 10 per cent of their basic pay subject to a maximum of Rs. 75 per month. The minimum disability should be 40 per cent to avail of this (conveyance allowance) facility.

Need for more concessions

Apart from these concessions, the physically handicapped may be given the following concessions for spear-heading their developments :

This community is not only physically handicapped, but also financially handicapped, so application fees for the Government jobs should be abolished, (whereas the able-bodied SC|ST candidates are exempted 1|4th of the normal fee).

The Government of India has sanctioned 3 per cent of job reservation for physically handicapped, but the same is not being implemented properly inspite of our Late Prime Minister Mrs. Indira Gandhi's appeal to her Cabinet Ministers, vide her D.O. letter No. 976-PMO|80, dated 14th June, 1980, to this effect.

The nationalised banks should be directed to disburse D.R.I. (Differential Rate of Interest) loans very liberally without any collectoral surety at 4 per cent concessional interest so that the handicapped may start some kind of self-employment to solve their unemployment.

The Railway concession rule at present is a biggest head-ache to the handicapped and accordingly, they will have to approach orthopaedic surgeons|Government doctors to have concession certificate for each and every trip. This type of rule should be removed and a permanent identity ca d provided (in USSR, the handicapped are given full fare concession in road transport and 50 per cent concession in train and plane).

One of the slogans of the IYDP-81 (International Year of the Disabled Persons) was "Residential Institutions for the College going Orthopaedically Handicapped Students" in Delhi, but the Delhi Administration, Department of Social Welfare dropped this scheme at the eleventh hour after giving clarion call for admission. So the Delhi Administration should open the same and such Institutions should be opened in all the key stations of the nation.

The Government should come-forward to abolish the policy of "Sons of Soil" in general, particularly for the physically handicapped candidates, so that the slogan of our Prime Minister "Kashmir to Kanyakumari India is one" may come true. For this, strict circulars should be sent to all the State Governments| Employment Exchanges.

VRC (Vocational Rehabilitation Centre|Special Employment Exchange of the Handicapped, for the Handicapped by the Handicapped) :

At present, there are 14 Vocational Rehabilitation Centres and 22 Special Employment Exchanges working for the welfare of the handicapped in the key stations of the country. In these offices, the staff should be handicapped persons so that they can do their best for the betterment of the handicapped.

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Whither these intellectuals !

Dr. S. R. Chirmade

If there is any class prepared to set aside, if only for a while, the private interests, and able to perceive common good with detachment needed, it is certainly the class of intellectuals. Indian intellectuals were at the centre of socio-economic and political movement during the freedom struggle. But why did they belie our hopes in post independence era? The author looks into the causes.

THE INTELLECTUAL IS ONE who is a source of inspiring ideas and stands courageously for some to bring about progressive changes in the society. His equanimity makes him resent any indignity directed against the weak and the indigent who are incapable of protest. Threats cannot extinguish his spirit nor torture alter his conviction.

In society he will expose hypocrisy, exploitation, obscurantism and venality, in politics he will resist tyranny, despotism and corruption and in religion he will fight profanity and falsification. The intellectuals include writers, scientists, philosphers, religious thinkers, social theorists, political commentators, teachers, journalists, etc.

The Common Cultural bond in a society extends beyond kinship and friendship. In the development of common culture intellectuals play a major role through institutions such as churches, schools, and newspapers. Through these intellectuals and institutions a sense of identity and of membership in a society is formed and content is given to the symbolism of the National Society. The creation of regional and national culture out of tribal or village culture in modern times in Europe, and in contemporary Asia and Africa, is the work of teachers, authors, and journalists, just as the formation of the American nation out of diverse ethnic groups is the achievement of teachers, clergymen and journalists

By providing models and standards, intellectuals guide and form the expressive dispositions within the society. However, this is not to say that the expressive life of a society is under the exclusive domination of its intellectuals. Despite these variations it is true that much of the expressive life of the society, even what is most vulgar and tasteless, echoes some of the expressive practices and beliefs of intellectual traditions to influence the movement of social structure and change in the incumbents of authoritative roles, etc.

Intellectuals and politics

Despite the distrust between the intellectuals and politicians, intellectuals have been serving various regimes. Since the nineteenth century, business firms first in Germany, then in America, and later in industrialized countries have taken to the large scale employment of scientists in research departments and to a much smaller extent in executive capacities. High Standard of education has been considered equally necessary for the satisfactory functioning of the State. History provides many illustrations of intellectuals playing roles as counsellors or advisers to the sovereigns such as Plato with Syracuse, Aristotle with Alexander III. Hobbes with Charles II. Kautliya with Chandragupta Mourya, Lord Keynes with Franklin Roosevelt.

Intellectuals and statecraft

Intellectuals being associated with State or Government is more common in democracies than in monarchies. Intellectuals have emerged occasionally in

monarchies through sheer accidents or at least through no deliberate process of selection. Ashok, Marcus, Aurelius and Akhnaton are few such men. In the liberal democratic party politics of the nineteenth & the twentieth centuries, there have been numerous impressive instances of productive intellectuals who have been able by their own efforts to play a notable role in the exercise of great political authority. Benjamin Disraeli, William Gladstone, Woodrow Wilson, Jawaharlal Nehru, Harold Wilson are some of them. Liberal and constitutional politics in great modern states and domocratic progressive nationalist movements in colonial territories have, to a large extent been intellectual politics. Modern intellectuals have supplied the doctrine and ideological movements.

A polish revolutionary, Mr. Waclaw Machajski, in his book "Intellectual Worker" (1905) propounded the theory that socialist movement actually expressed the ideology of dissatisfied intellectuals and its success would result not in classless society but in the creation of new ruling class of intellectuals. Mr. Max Nomad and H. D. Lasswell also stated that most of the revolution in twentieth century have been led by intellectuals.

The intellectuals stand between the bourgeoisie and the proletariat. If there is any class prepared to set aside, if only for a while, the private interests, and able to perceive common good with detachment needed it is certainly the class of intellectuals. According to Karl Mennheim intellectuals are capable of acquiring a relatively complete and objective view of their society and of acting independently to promote more general social interests.

Intellectuals have taken a prominent part in radical and revolutionary movements as in Poland, Hungry and Cuba and in the anti-colonial movements in many countries.

Nurturing grounds

In many societies, the universities and intellectual occupations in general have constituted principal means by which the talented individuals could rise to important positions. As a result, the social composition of intellectual elite has usually differed considerably from that of other elites. Many intellectuals ally themselves with the working class movement. The intellectuals form a group which is capable of taking an objective view of society and of defending consistently general interests of society as a whole.

The political attitudes of intellectuals are influenced very strongly by their social class origins. The size and internal differentiation of the intellectual elites have increased especially at lower levels with the expansion of University education and the growth of scientific, technical and professional occupations. At the same time, changes have occurred in the relative importance of different groups within intellectuals elite experts of one kind or another have to come to predominate over the more literary and philosophical exponents of general cultural or social ideas. The naturals scientists have been instrumental in shaping the public policy through membership to advisory bodies and representation in Government and administration. As a result of this intellectuals have tended to become less radical critics of society as a whole and are concerned with solving the short term problem which arise out of complex activities of the industrial societies in which they live.

During freedom struggle

During the pre-independence era intellectuals were at the centre of the socio-economic and political movement and they remained at vantage point in guiding and charting the course of events in the later part of the nineteenth and the first part of the twentieth centuries. There was brilliant galaxy or assemblage of intellectuals as R. C. Dutt blazed a new trail in social and economic history, Ranade a Judge of High Court steeped in the liberal doctrines of J. S. Mill, researched the economic concepts familarized by West and reassessed their application to the Indian Political and Social system. G. K. Gokhale and Dadabhai Naoroji by their relentless pursuit of logic brought to focus the burning issue of economic drain from the country. In the field of social policies such as child welfare, widow marriage, Hindu religious retuals, customs and caste, leaders like Phule and D. K. Karve aroused Public conscience through debate; dialogue with the people and the administration. Phiroz Shah Mehta, and Dinshaw Wachha planted the seeds of democratic institutions and practices and nursed them in their infancy. They retain what was more enduring and noble in the traditional culture and tried to integrate it with the logical frame of modern social sciences.

As self reliance was the basis of their activities the intellectual leaders in the pre-independence period could retain their independence of thought; fearlessness in public life and display a rare sense of public service and welfare unmindful equally of the encominums from the foreign regime with which they were in fundamental apathy. On many issues the intellectuals' opinions or ideas did not agree with those of the authorities, even then they were always respected and even accepted.

Renaissance

In the realm of religion and culture it was Vivekanand, Ramkrishna and Aurobindo Ghosh who awakened sleepy intelligentsia to the richess of the past. This phase was paralleled by a militancy of political thought and action, spear-headed by the great Tilak a mathematician and philosopher in his own right. Bankim Chatterjee preached aggressive approach on national issues.

The intellectual activity reflected clear and visible signs of creativity in many branches of social and physical sciences and literature. Tagore and Iqbal reflected their broad humanism and Universalism. J.C. Bose, P. C. Ray, Ramanujam and C. V. Raman made original contribution to modern sciences. Bhandarkar and Telang, brought to bear on the oriental studies, the new scientific method of social sciences, as a creative response to Max Muller's Forays into Hindu Philosophy. Ambedkar's disturbing unconventionalism and iconoclastic approach turned upside down the holy Hindu Scriptures. All these illuminated the Indian intellectual scene.

Gandhi era

The most significant dimension added to the activities of the creative intellectuals was by Mahatma Gandhi and Jawaharlal Nehru. Gandhiji was the most Sweeping revolutionary influence on the Indian Social and political system. He fastened on to the equanimity doctrine of Gita to Preach selfless service. He reinterpreted Hindu Scriptures to denounce the caste system and to raise public consciousness about the gravity of the problem of untouchability. His espousal of the cause of emancipation of women, advocacy of small and cottage industries, and emphasizing village as the unit of administration, his stubborn and persistent pursuit of what could unite two of the largest religious communities in common endeavour, his accent on decentralization of power, his ideas on basic education, and language as a vehicle of communication—all these facets of Gandhiji's thought were revolutionary and unorthodox.

Nehru placed Indian issues in a historical perspective. If India lost her freedom and she remained backward it was because she had a social and economic system which was an historical anachronism. Nehru thought that India should keep her ears close to the happening in the modern societies in the west, absorb their techniques and institutions.

It may be broadly generalized that the intellectuals during the pre-independence era, as a whole could make their influence felt on the course of events and their ideas not only preceded social and political change, but actually determined its nature in many different ways.

After independence

The Indian intellectuals with such a glorious traditions of achievement in public policy, were naturally expected after independence to become even more vigorous and contribute to the process of modernization of Indian Society. However a review of last three decades has clearly brought out that it was not the ideas or activities of the intellectuals, which has set the pace of change in post-independence era. What was the reasons for the transformation of the intellectual role in the post-independence India and the underlying causes of their relative insignificance

There has been an enormous spread of education in India in the recent years. The yearly turnover of University graduates has been around four lakhs. India could rank with U.S.A. and U.S.S.R. in terms of number of University graduates per year. Such a mass of educated elite should create the most ideal conditions for a intellectual activities. In terms of institutional apparatus also Indian intellectuals have been fortunate as the structure has spread far and wide covering many branches of knowledge such as Physics, Chemistry, Metallurgy, Mathematics, Engineering, Economics etc.

Merely creation of educational facilities can not be synonymous with the creation of intellectuals. India has produced a mass of workers who can man the government agencies, which were expanding in wake of planned development of the country. This proliferating class of intellect workers has gradually made their creative presence felt in many areas of human knowledge. In social sciences contributions of Indian scholars have been the most conspicuous; particularly in two branches i.e. development economics and agriculture where Indian scholars have extended the frontiers of knowledge. The same could be said of natural sciences such as Physics, Chemistry and Botany. But the Indian intellectuals have not been able to influence the extent and nature of social and political economic change in the country.

An intellectual is not merely engaged in the pursuit of knowledge for its own sake. He is cast in different roles of being one who perceives prevailing social and political reality in its interconnectedness or as a part of the historical process. This means that intellectuals should have vast knowledge, the most comprehensive education and the greatest responsibility for exploring and assimilating historical experience for providing society with such human orientation and such intelligent, guidance as may be obtainable at every junction on its historical journey. This role places an onerous duty on the intellectuals to tell the truth, as they percieve it and to have the courage of their convictions and an unimpeachable honesty. Since truth seeking is his major profession the intellectual should be able, as Marx said, to criticize every thing that exists. Unlike the Indian intellectuals of the pre-Independence era who possessed many of these qualities, their descendants singularly failed in this respect. They do not pose the image of fearless social critics.

With the spread of education and the consequent lowering of the standards, the hiatus developed between the sea of mediocrity and the islands of elites. Due to limited employment opportunities the best minds gravitated to non-academic, but remunerative pursuits at the few centres of excellence or with government leaving academia bereft of the cream of talent. The culture of mind languished. In the pre-independence period the role of intellectual was both to generate and disseminate ideas and to engage in public discus-

sion of the issues that had a bearing on the progress of the society.

Freedom from foreign rule, perhaps, strengthened the first role of intellectuals after independence, extending the areas of interest of the intellectual into new and creative directions but enfeebled the second role-that of rousing the public consciousness through open and dispassionate debate of the questions of civil concern. This was in some measure a corollary of some intellectuals participation in political process, thereby blurring the line between their prime concern for truth and seeking and taking over the political power.

The intellectuals pursued their intents in esoteric fashion They did so either by surviving through submergence with power elite, or joined the power elite by proxy. The whole administrative and policy paraphernalia in the planned economy of India such as public investment, social control of economic activity, income distribution, employment generation, poverty eradication has been mostly in the hands of the bureaucrat intellectuals. On this account their contribution should have been vigorous entwining the enunciation of institutional implications of the policy issues. But it is very clear by now that the bureaucrat intellectuals plume themselves on the improvement of administration but no one improves himself.

The decline and fall of Indian intellectuals in the post-Independence period is awful and miserable. The pervading and proliferating crisis of ethical values and the consequent decay in the social system have eaten up the very vitals of the mental processes of intellectuals.

Crash in Intellectual traditions

Political and social system, hostility or apathy to intellectual activities, the precarious economic situation of the intellectuals, who have most often to exert themselves to make their livelihood, have all tended to make them feel frustrated.

Western influence

The modern and dominant tradition at the beginning of this century was Western in its origin and spirit. It was created by those who had received a Western type education. This westernization of Hindu mind was not encouraged by British rulers who preferred that the Indian people should remain attached to their traditional ways. While missionaries preached their religion but had no interest in professing European rationalism. The adaption of the Western intellectual traditions in India was the work primarily of Indians themselves.

Distortion of tradition

The Intellectuals who have such tradition in social sphere as arousing public consciousness against such social evils as widow burning, infanticides, early marriages have now remained almost silent on such proliferating social evils as dowry deaths, wife burning, and the fast growth of parallel economy. The intellectuals have been alienated from the masses and they have taken intellectual activities just for earning their livelihood. Some pursue intellectual activities just as personal hobby.

There has been no cultural fusion and stratification has been effected due to emergence of a new class of intellectuals in the field of law, medicine, teaching and such professions as architects, chartered accountants, engineers who have been taking their share with stake in the fast proliferating unsanctioned economy in India which is being recently estimated as 50 per cent of GNP by Mr. Vitto Tanzi and senior official of I.M.F. Shri H. K. Paranjape has stated that intellectuals in India form a stratum of petty bourgeoisie, who have thrived best in the period since independence and that they have hyjacked the newly—independent Indian economy and subverted it to serve their own purpose.

There has emerged an unwritten alliance amongst the professionals, the bureaucrats and the bourgeoisie with the intent of mutual advantage. The bourgeoisie and the upper echelons of the middle class benefit from keeping the lower middle class and poor at lowest level of income. The salary hikes of the upper echelons of the intellectual bureaucrats serve to expand the market. About 80 per cent of the members of the Civil Services come from the urban, salaried and professional upper middle class. Aptly Prof. V. M. Dandekar has stated that there is a collusion between the bureaucracy and private business, aided and abetted by the middle and upper middle classes or what we may broadly term the intellectuals. □

More fair price shops in rural areas

OF THE 3,02,360 fair price shops in he country, 77 per cent are in rural areas. According to the latest figures, available in the Ministry of Food and Civil Supplies, the number of fair price shops in rural areas in 2.34 lakh as against 68,000 in urban areas.

The fair price shops are now selling seven essential items such as wheat, rice, sugar, imported edible oil, kerosene, soft coke and controlled cloth. In order to make these shops more viable, the Union Department of Civil Supplies has suggested to the manufacturers of certain consumer articles of mass consumption such as matches soaps, torch cells, razor blades, cycle tyres and tubes, to supply their products to State Government nominated agencies on the same terms as these are supplied to wholesalers. The manufacturers have agreed to the suggestion; and consequently, these essential items will also be sold at the fair price shops.

This boss, this style!

Bhushan

I am a bureaucrat—a senior bureaucrat of the Government of India, to be precise. In office I have hundreds of people at my beck and call. When I reach the gates of my office, I see my peon waiting for me. He takes my briefcase and escorts me to my room. He opens the door of my room for me and makes sure that my room is neat and clean. I do not tolerate even a particle of dust on my table or chair......

I ENTER THE ROOM and occupy my high back revolving chair. My table is clean—there are no files but a host of current newspapers, supplied by the office, are waiting for me to be seen.

I glance through the headlines of a few of them, then throw them aside. I am suddenly reminded of my ailing father at Madras, so I give buzzer to my P.A. and ask him to connect me to him. Thanks to the Telephone Department for connecting such distant places through STD! Revolving on my luxury chair in Delhi, I talk to my father in Madras. My P.A. takes the trouble of dialling the number for me hundreds of times and my office pays the bills. No problem for me—I can chitchat as long as I wish!

My father is improving—that gives me some solace. I try to look through a few files, which have since piled on my table. Oh, such lengthy notes! Such complicated problems! I don't have the patience to read through those long, long notes I hate to look at those dirty files! I dispose of a few simpler files. The difficult ones go back with my sideline notes 'Please speak'.

I remember that I have to go to the market to buy a few nick-nacks for my kids. My wife would get damn annoyed if I forget to bring these things. I ask my P.A. to arrange for the staff car. I go to market and get the things. The car keeps waiting for me. I raise hell if the car is not provided to me whenever I want. The driver has to keep waiting for me till the "meeting' is over. To regularise such a trip is my PA's headache; so I don't have to strain my conscience on that account. He will show some meeting in some office and sign the log book himself. Who is going to counter-check? They are all my people! They are all afraid of me!

Friendly chat

I come back to my office. I feel tired, so I want to have a cup of tea. I ask my PA to get two cups of tea in my room, ring up my friend to join me over a cup of tea and then relax on my luxurious sofa set. My friend comes soon. We have a long tea-session in which we discuss everything beginning from the general elections to the tragedy in Bhopal.

Matter of urgency

A few people, my subordinates of course, peep into my room to see whether I am free for official discussion. Seeing me busy, they go back. Lots of people are disposed of by my PA and peon too; so, only those people dare peep into my room who really have something urgent or important.

My PA signs the slip for tea, so I don't have to care for payment. Office will take care of the bill. Afterall, whatever I do in office is 'official'!

Five-star stuff

After the tea-session is over it is lunch time. I have an invitation for lunch at Ashoka Hotel. At least

15 days in a month I have such invitations for official lunches. Again, I take a staff car and oblige the host by my presence! He thanks me again and again for taking the trouble of coming to the lunch, sparing a few minutes from my busy schedule!

The lunch is delicious and so is the company there. Rarely anything official is discussed in such official lunches. It is all 'small talk' by big people.

The atmosphere becomes drowsy after a rich five-star lunch. I would have loved to doze off for a few minutes on my sofa but my sense of duty keeps me awake. I ask my PA to call all those who have been waiting to see me since morning.

Something of business

They all come and occupy the chairs around my table. It is now, before my subordinates turned courtiers that I get the feel of being a real big boss, a King of my Kingdom. I love this feeling, and that is the reason that I call all of them together. To call one at a time and finish business with him in a few minutes does not really give you the kick of being a KING.

I revolve on my chair, with a cigarette in my hand, and throw a quick glance on all of them. They all have one or the other problem, and they are looking up to me for a decision—a decision to solve the problem Fools! They are all fools! That is why they want to solve the problems! Can there be a Kingdom without problems? I don't want to dethrone myself by solving the problems and being PROBLEMLESS

Ultimate solution

Anyway, these are my innermost feelings which I can't share with anybody. Openly, I fret and frown at problems, I swear that I will devise ways and means to solve them all, and solve them once for all. But how? I form Committees and sub-committees at the slightest provocations. The members of those committees are selected by odd permutations and combinations. I have to make sure that they don't see eye to eye and thus don't arrive at my conclusions!

Sermon on the mat

I give a long lecture on the filthy way the files are being maintained, the way the stationery is being wasted, the way the office canteens get thronged by people during office hours. I eulogise the virtues of punctuality and discipline; I advocate economy in Government expenditure. I stand for everything that is THE BEST and THE IDEAL. My subordinates will dare not murmur anymore because they are all guilty of violating one or the other ideal being preached by me. And they don't have guts to question ME!

After the discussions are over, the courtiers move to leave. I try to impress them by my generosity and magnanimity—I call for tea, of course, it is official tea. They all sit back. I resume my Sermon to them—this time the subject is mutual cooperation and good-will.

The tea arrives, and in the meanwhile the sermon comes to an abrupt end. We all enjoy tea. The clever ones utter a few words in praise of what I said—my high ideals and immaculate virtues. The meeting has a happy end.

Busiest bee!

I am left alone. I look at the quartz clock on the wall in front of me. It is already 5.30—time to leave. But no, not so early. What will my boss think, if I leave so early! I have to create an aura of being overworked. And more important than that, what will my wife think, if I reach home in time, like a clerk, a clock-watcher!

There is another aspect of it too. My PAs and peons have to be given overtime—nothing else can keep them in good humour. I can safely get a staff car for going home, if I start late. If I go by bus now, I will reach home the same time if I go by a staff car one hour later. So what is the hurry? Why not sit in the air-conditioned room in office itself for some more time. I am not a newly wed honey-mooner anymore!

Private affairs

I ask my PA to connect me to my friends. I discuss the trends of the share market with them—what to buy and what to sell. I dictate a few letters to my PA—of course, they are personal letters, and then I ask for the staff car. It is 6.30 already—a glorious day has ended.

I attune myself to face the music at home. I am the KING of the office, but my wife reigns the HOME. We don't interfere in each other's domain—so it is all smooth-sailing.

Homely life

I reach home, with packets of my day-time purchases. They are hurriedly taken away and opened by the children. They cry in excitement and joy. But not my wife. She frowns at my purchases. She feels that I have been cheated—that I can't do anything right. I have got used to her nagging by now. I pretend not to hear her. I switch on the TV and start watching the boring programme being telecast. What rubbish! They have nothing better to show at such dull moments!

Oh, eve at home?

"There is no vegetable in the house. If you want dinner in the house, you will have to go and buy the vegetables"—shouts my wife.

I don't know what she does the whole day. Why can't she herself go and buy vegetables? I come home after a busy day in office. I want to relax for a little while. But my wife hates to see me relaxing even for a minute. She keeps me in a spin all-the time.

I think of the alternatives available to me if I don't want to go to the market for buying vegetables. A family dinner outside? O, NO.... too expensive! I have to pay for it from my pocket, you know. Office is not going to foot the bill. And there is no staff car available at this time.

I can't afford to waste my hard-earned money like this. I humbly take the basket and leave. The vegetable market is close by. I walk the distance, formulating the plans for the next day in office—yes, that is my real sphere. At home I am just a parasite.

The vegetable shop-keeper refuses to recognise me as a big shot—for him I am like any other customer. He fights with me for 'change'. I leave the shop in a huff, leaving a little 'change' with the shopkeeper. What a senseless lot! They don't know whom they are talking to!

Give an account

My wife asks for the account of each single paisa that I spend. She cannot digest the idea of leaving the 'change' with the shopkeeper. "An incorrigible spendthrift"! She grumbles for me.

The fight will never end if I reply back. So better keep quiet and get the dinner made. The Ashoka Hotel lunch has already been digested and I have a strong craving for the dinner.

Intimate moments!

I peel and cut the vegetables. My wife cooks the food. I lay the table. The atmosphere is light and friendly again. We all have dinner together.

My wife wants to have a little stroll after dinner. I would have loved to relax—but can't afford to annoy my wife! I meekly follow her. Children have to study, so they are left behind.

My wife talks and I listen. Had it been simple listening, it would have been alright. But the trouble is that she wants me to remember the umpteen number of things that she wants to be purchased, and which she mentions at such moments—the old sofa giving way, wanting to be replaced, the bedsheets and curtains to be replaced, matching with the sofa, the clothes for children to be stiched, and what not. It is a long, long charter of demands, but where is the money for it all? This is not office where you order even a good sofa to be replaced because you are fed up of seeing the same old colour day after day!

The day comes to an end at last! It is time to go to bed. Tomorrow will be another day..........!

The routing again!

The day begins with a cup of tea. Yes, I make this tea—for myself as well as my wife. I am an early riser, and she a habitual late riser. Anyway, the morning cup of tea serves as a good enough incentive for her to leave the bed.

Now I relax with the paper and she gets busy in the kitchen. She has to prepare breakfast for all of us. Children have to catch their buses for school. Thank God, they have grown up now, and can get ready by themselves! I used to have a tough time earlier, when they were small. I had to prepare both of them for school—giving bath to them, dressing them up and what not—how terrible it used to be!

After the children leave, it is my turn to get ready and leave. I have to catch the bus to office in time. While in the bus, I attune myself to the Big DAY, ahead of me . . . . ! ! ! Once again I assume airs of A REAL BIG BOSS and enter the office, escorted by my peon, who is waiting outside. ☐

(*Continued from page* 20)

and not to restrict the market only to the class which has surplus purchasing power. The whole existing concept would undergo a basic change.

Today, because a very small section of society has a disproportionately high purchasing power, the effort of the producers is to create an artificial demand by advertising their goods to an exaggerated degree and goading the people into using them. The people are even being enticed to throw the goods away after use and to buy new ones as often as they can. The artificial demand thus generated is creating a consumerist extravagence of wastefulness of productive activity. The emulation of an affluent market is evident in the affluent class even of a developing country. Only by being projected as a competitive status symbol is consumerist psychology developed, although rationally, even those indulging in such projection can see the wastefulness of the economic activity.

Hence, even the use of the media for advertisement purposes must be so reoriented as to meet the requirements and necessities of life of the entire population rather than indulging in wasteful spending over a small section. But as productive activity gets dispersed, the economic market will spread out by generating purchasing power in the entire society. As a result of this dispersal, especially to rural areas, the whole concept of advertising would also undergo a charge for the better.

In such a holistic concept of our economy which, in fact, is the very essence and object of planning, the productive activity would be so distributed and so well linked by the marketing mechanism that there would be hardly any need for human beings to pour into urban pockets of Industrial concentration where they have to live in inhuman conditions in slums. Ineed, there can be no half-hearted solution to our socio-economic problems. One problem is interlinked with another, and, therefore, unless we have a holistic view and approach the issue from that perspective, we will never be able to solve our economic problems. ☐

(Next Issue : The Alternative)

Working group sets 7th Plan foodgrain targets

A WORKING GROUP SET UP by the Planning Commission has recommended strengthening of the key service institutions like research, extension, inputs, credit and marketing, besides timely power and water supply to the farmers, for augmenting agricultural production during the Seventh Five Year Plan period. The Group, in its report, has suggested measures for ensuring proper fertilizer utilisation in the backward areas to avoid the highly uneven trend of its consumption.

The 33-member Working Group, headed by Shri K. C. S. Achary, Additional Secretary in the Union Ministry of Agriculture, has also set the targets of foodgrains production by the end of the Seventh plan. These targets are as follows: Rice 75 million tonnes, wheat 58 million tonnes, coarse grains 35.1 million tonnes, and pulses 17 million tonnes.

The Group has observed that the past practice of preparing uniform schemes applicable to the entire country should be done away with. Instead, the Centre should announce only broad programmes under which the States should have considerable freedom to prepare their projects. The report points out that wheat and jowar are the only two crops which showed a significantly higher growth rate of yield in the post-green revolution period.

Besides regional disparities, the report points out, there has also been inter-crop disparities. Since the green revolution, about 94 per cent of the increase in foodgrains production came only from wheat and rice, and that too from a very small geographical base.

The working group observes that in the Seventh Plan strengthening of the key service institutions, namely, research, extension, inputs, credit, marketing, etc., is necessary to avoid lop-sided development of agriculture. Pointing out the gradual increase of instability in agricultural production, the group favours betterment of the overall management of agriculture by ensuring inputs, reliable supply of power and water in irrigated areas and strengthening extension.

The working Group has also noted that massive investment in surface irrigation has not paid rich dividends in the past. Five States, namely Andhra Pradesh, Gujarat, Maharashtra, Madhya Pradesh and Karnataka accounted for 45.14 per cent of the irrigation potential created in 1983-84. But these States brought about only 22.8 per cent of increase in foodgrains production in the post-green revolution period. The Working Group, therefore, advocates caution while deciding to spend heavy amounts in surface irrigation projects without considering whether such projects are really crucial to increasing foodgrains production.

In the opinion of the Working Group, problems, which Indian agriculture will have to face in the Seventh Plan, will be very much different and so will be the strategies. Particularly the areas from where increased foodgrains production will have to come in future will be relatively more heterogeneous. The Working Group advocates that more investment is no substitute for better management. So, what is required in the Seventh Plan is better management rather than more investment. It has observed that it will be futile to frame standard type programmes at the Centre because of varying agro-climatic conditions. The only sound approach would be to introduce a measure of flexibility and allow the initiative to rest at the State/Regional level to design programmes that would best answer the local situation. According to the Working Group, research and extension hold the key to attaining Seventh Plan targets. Spread of technology is not uniform all over the country. It is necessary to propagate more location-specific and relevant technology. This involves strong extension net-work and greater linkage between extension and research.

The Training and Visit System of Extension (T&V), which has been introduced in 13 States so far, has started showing very impressive results. In Tamil Nadu, Maharashtra, Gujarat, Orissa and part of

Rajasthan, Madhya Pradesh and Haryana, this system has been primarily responsible for increasing the production as well as the consumption of seeds and fertilizers. There is, therefore, a need for the States to get committed to professional agricultural extension with the clear recognition that agricultural extension needs a full-time extension service, the Working Group observes.

The Seventh Plan targets for different crops, according to the Working Group, should be as follows:

	(Million tonnes)
Rice	75.0
Wheat	58.0
Coarse Grains	35.1
Total Cereals	168 1
Total pulses	17 0

These targets, the Group feels, will pose very severe challenges and, therefore, call for a totally different set of strategies. The departure which it advocates lies in a switch-over from a subsidy-oriented approach to service-oriented approach. The Working Group identifies the following as the key issues for the Seventh Plan: rainfed farming, eastern region, increasing productivity of wheat, increasing cropping intensity, irrigation efficiency, toning up of agricultural administration and agricultural development of tribal areas.

The Group also pleads for greater allocation for the maintenance of irrigation projects, better training of field staff of the State Agriculture Departments and more rapid exploitation of grouhdwater particularly in the eastern region.

The Working Group has devoted a whole chapter to agricultural development in tribal areas. The Group feels that the programmes for the tribal areas should recognise the essential human element and should not be a mere repetition of the programmes formulated elesewhere.

Transaction of the public sector

A publication entitled "Transactions of the public sector 1960-61 to 1979-80" has been released by the Central Statistical Organisation (CSO), Department of Statistics, Ministry of Planning.

CSO has initiated indepth studies in early sixties to assess the role of public sector in the generation of national income, capital formation, saving etc The broad results of these studies are being regularly published in its annual publication 'National accounts statistics'. In the process of analysis of various aspects of public sector a large mass of data have been generated over the years.

The publication presents economic accounts of the various components of the public sector as recommended by the United Nations. These comprise accounts of the administrative departments, departmental enterprises and non-departmental enterprises. In addition, a number of supplementary tables providing further break up of important aggregates are also presented.

The accounts and tables provide data for two decades from 1960-61 to 1979-80, with some exceptions where details could be furnished only for the period 1970-71 to 1979-80.

The publication is presented in four sections. The first section provides accounts of administrative departments and departmental enterprises. Non-departmental enterprises are of two categories, namely financial and non-financial enterprises. Accounts of non-departmental non-financial enterprises by industry are presented in the next section. Section 3 enumerates accounts of non-departmental financial enterprises and insurance. The fourth section contains supplementary statements showing performance of the public sector and disaggregation of gross|net product by type of authority and kind of economic activity and factor shares. Details of gross capital formation by type of authority, industry of use and by type of assets are also given. Each section includes explanatory notes on various items of accounts and supplementary statements.

(*Continued from page* 25)

Whether the handicapped are given jobs in other offices or not, but in such offices (VRCs and Special Employment Exchanges) the handicapped should be appointed.

Able bodied persons, who come-forward to marry the handicapped should be rewarded and such marriage should be encouraged; so that we can solve the differences between the abled and disabled

Strict orders should be sent to all the Vice-Chancellors of the Universities to implement the 10 per cent of weightage of marks|concessions for admissions in various courses with the disability certificate of any of the doctors but not necessarily by the Medical Boards attached to these Universities (because these cause these Medical Boards are not working properly)

The "World Day of the Disabled" is being observed on third Sunday of March every Year, so the following Monday should be declared as Public Holiday to mark this function.

Free educational facilities up to Post Graduation including correspondence course should be introduced for the upliftment of the handicapped; so that illiteracy among the handicapped can be eradicated.

Women live longer now

The average life expectancy of women in India has gone up from 31.7 years in 1951 to 54.6 years in 1981. This also changed the reverse trend of sex ratio for women after 1971. For the first time since independence this trend has been reversed and the ratio has risen from 930 to 935 women to every thousand men. This follows a number of special programmes being run by the Government of India and the State Governments to improve women's health including immunisation of expectant mothers and provision of supplementary nutrition to pregnant and lactating mothers.

Since 1979-80 the Government has intensified the programme for training of traditional birth attendants to provide atleast one TBA in each village in the country for providing hygienic and safe delivery services. As in March, 1983 over 4.40 lakhs TBAs had been trained besides the training programmes for female health workers and lady health visitors.

The implementation of National Plan of Action for Women which was approved in February, 1976 has improved women's lot in the areas of education, health, family planning, nutrition and employment. In addition, legislative measures and the social strategies have also contributed in improving women's position in these areas. ☐

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Indian oil processes more crude oil

Indian Oil Corporation Limited the largest of marketing and refining oil companies in the country with a total refining capacity of 20.45 million tonnes, processed during 1983-84, 19.46 million tonnes of crude oil, 1.63 million tonnes more than its throughput of 17.83 million tonnes in the previous year, according to the Government review of the 1983-84 annual report of the Company.

The production of LPG also increased by 36 per cent during the year.

The Corporation achieved a turnover of Rs. 10299.29 crores during 1983-84 as against Rs. 9791.60 crores in 1982-83. Profit before tax during the year was Rs. 144.04 crores and that after tax Rs. 82.54 crores. Sales also went up to 21.55 million tonnes of petroleum products as against 21.34 million tonnes in the previous year.

As the only canalising agency for the import and export of crude oil and petroleum products on behalf of the Government, the Corporation imported 14.20 million tonnes of crude oil, 3.96 million tonnes of finished petroleum products and 0.102 million tonnes of lubricants for the oil industry. In addition, 87,000 tonnes of kerosene and 2,46,000 tonnes of HSD were imported against crude oil processed outside the country. The total import bill of the Corporation was Rs. 4277 crores during the year as against Rs. 4735 crores in the previous year.

The review said that the Corporation also exported 4.99 million tonnes of Bombay High crude valued at Rs. 1113 crores as against 4.35 million tonnes valued at Rs. 1021 crores in 1982-83 in addition to the export of 1.47 million tonnes of finished products valued at Rs. 357 crores. □

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What price this development !

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yojana

APRIL 1—15, 1985, RUPEES 1.50

Why urban economic inequality ?

NEXT ISSUE

Better education, better nation

Land survey in Seventh Plan

50 5 MILLION HECTARES of land is proposed to be surveyed during the Seventh Five-Year Plan. Out of this, detailed soil surveys will be undertaken on 25 lakh hectares, priority delineation surveys on 400 lakh hectares and reconnisance surveys on 80 lakh hectares. In addition, sample soil surveys will be conducted in 6,000 blocks at an estimated cost of Rs. 10 crore.

Till 1983-84, priority delineation surveys had been accomplished on 54 43 million hectares and detailed soil surveys on 7 2 million hectares. Sample soil surveys had also been completed in 4,710 blocks. In the financial year 1984-85, 50 lakhs hectares would be covered by priority delineation surveys and 3 67 lakh hectares by detailed soil surveys. Sample surveys would also be undertaken in 980 blocks of 64 hectares each. The expenditure on the project is estimated at Rs. 97 lakh.

The major responsibility of the All India Soil and Land Use Survey, which functions through four regional centres and three sub-centres, is to carry out priority delineation surveys in the 36 catchments of river valley projects and flood-prone rivers covered by two Centrally-sponsored schemes. The organisation has established a Remote Sensing Centre in collaboration with UNDP/FAO. It also collaborates with the Indian Space Research Organisation, the Space Application Centre and the National Remote Sensing Agency.

During the Seventh Plan, the scheme for creating new soil survey organisations and strengthening the existing ones, initiated during the Fifth Plan but transferred to the State sector during 1979-80 on the recommendation of the National Development Council, is also proposed to be revived and extended to the States with 50 : 50 matching allocation between the Centre and the States. An outlay of Rs. 3 crore has been proposed in the Plan for this purpose. ☐

YOJANA

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How economy performed under Mrs. Indira Gandhi

Dr. V.R.M. Desai

Mrs. Indira Gandhi's regime witnessed a tremendous leap of economic development through a planned economy, says the author. The full impact of her various programmes can be seen in bringing a large portion of people above the poverty line. The author observes that the IRDP Programme is the greatest contribution of Mrs. Gandhi in mitigating the sufferings of the poorest among the poor.

THE FORMER PRIME MINISTER, Mrs Indira Gandhi dominated the Indian scene for nearly two decades. Her contributions to the Indian economy are significant and remarkable. An enquiry into the impact she made on Indian economy is, therefore, both natural and fruitful. A thorough investigation of the subject will have to concern itself with various facets of the national life, economic, political social, cultural and scientific.

Mrs. Indira Gandhi took over reigns of Government on January 24, 1966 as the third Prime Minister of India consequent to the sudden death of Lal Bahadur Shastri at Tashkent. When Mrs. Indira Gandhi became Prime Minister the times were just trying. The economy was in shambles. Famine stalked the land. Under her stewardship India became self-sufficient in foodgrains. Significant advances were made in nuclear energy, oil production, space and polar exploration.

Economy gets new direction

On the economic front, she was instrumental in introducing social control on banks in 1968. It was she who gave a new direction to the Indian economy in moulding the financial institutions as catalytic agents for promoting economic development for the welfare of the masses. In 1969, the major 14 banks in India were nationalized with a view to making the banking industry an instrument in bringing social and economic change.

It was the policy guidelines issued by the Government of India under the able leadership of Mrs. Indira Gandhi that has enabled most of the banks to play an effective role in mitigating the pangs of poverty in India. Six commercial banks with deposits over Rs. 200 crores and above were nationalized by an Ordinance in 1980. She was the architect of the 20 Point Programme to help the weaker sections of the society.

Real incomes up

The average Indian is certainly better off now than in 1966. His real income today is 40 per cent more than in 1966. Per capita consumption of cereals, edible oils and vanaspati and milk grew rapidly during her period. Social indicators in regard to health showed substantial improvement. Literacy went up from 24 per cent to 36 per cent. The consumption of electricity in the average household has trebled from 24 to 75 units. What is more, television has made a very rapid headway after 1968-69. In fact, the country made an entry into an electronic and computer age. All this in spite of an unchecked rise in population from less than 500 million to around 725 million!

Food production up

Foodgrains production more than doubled from 72.3 million tonnes to 152 million tonnes. The per hectare yield of major crops showed substantial improvement. Net irrigated area rose from 26.3 million hectares to 41.5 million hectares. Following the adoption of new agricultural strategy in the 1966 kharif, there has been revolution in inputs in Indian agriculture, which increased much more rapidly than output. Between 1965-66 and 1984-85, the annual rate of increase in the area under high yielding varieties and pesticides were phenomenal. Fertilizers, oil engines and electric pumpsets and tubewells also came to be widely used. The public sector expenditure on agricultural research and education rose substantially at the annual rate of 29.4 per cent, compared to only 14.7 per cent in the first period (1950-51 to 1965-66). Industrial production registered an annual growth of 5 per cent. Industries such as chemical and chemical products, petroleum products, machine tools, non-electrical machinery showed a much higher growth than the average growth for all industries. On the other hand, the trade deficit has gone up by about nine times. The external value of rupee depreciated considerably. While, wholesale price index increased by 8.9 per cent, the consumer price index rose by 7.9 per cent per annum.

The number of small industries multiplied more than six-fold during this period and this has proved a dynamic and vibrant sector of industry, contributing more than Rs. 2,000 crores to exports, and providing more employment than large industries. Mrs. Gandhi has left the economy with enough wind to keep running, indeed to pick up pace in the period ahead.

Major banks nationalised

Bank nationalization also resulted in the fundamental shift from class banking to mass banking. The banking network reached out to the poor and into the hinterland. Of the 36,261 branches opened by the commercial banks since July 19, 1969, upto end-March 1984, 22,766 offices or 62.8 per cent were located in unbanked centres. The proportion of bank offices in rural areas stood at 55.6 per cent of total bank offices in India. Deposit growth gathered momentum and grew at an annual growth of 18.2 per cent. And, ordinary farmers, road transport operators, small industrialists and the self-employed trebled their share in total bank loans to 38 per cent. The small scale industries and agriculture are important components of the priority sector, constituting about 70 per cent of priority sector advances. This rapid transformation of a primary economic institution must rate as front-ranking achievement.

The leadership given by Mr. Indira Gandhi has really strengthened the banks and motivated them to go in a big way in helping the most unfortunate sections of people in this country. The IRDP Programme, which is unique in its nature in attempting to solve the problems at the family level, is the greatest contribution she made in mitigating the sufferings of the poorest among the poor.

In conclusion, the Indira Gandhi era had witnessed a tremendous leap and surge of economic development through a planned economy of which the public sector is a keynote. This in itself is a tribute to the wisdom of Indira Gandhi.

High lights

* During the 16 years of Indira Gandhi's period of Prime Ministership, real gross national product went up at an annual average rate (compound) of 4.4 per cent. Currently, the Indian economy is definitely witnessing a growth rate of 5.0 per cent per annum. The step-up in the annual average growth rate is the most important economic gain during the Indira Gandhi era.
* Though it began with a severe drought in foodgrains production, but ended with a sequence of record bumper harvests. During the three years from 1982-83 to 1984-85 per capita food supplies would be above 470 grammes as compared with 450 grammes from 1962-63 to 1964-65.
* The gross irrigated area went up during the Indira Gandhi period from 31 million hectares in 1965-66 to 63 million hectares by 1984-85 —a 100 per cent increase in 19 years, the bulk of the increase occuring during 1974-75 to 1984-85.
* Fertilizer consumption (NPK) was barely 80,000 tonnes in 1950-1951 and by 1965-66, it has gone up to about 8 lakh tonnes. By 1984-85, it had risen to about 7.8 million tonnes, a nearly ten-fold increase in 19 years.
* Nearly 52 million hectares were under the high yielding varieties in 1984-85.
* In industry, the annual rate of growth was about 5 per cent. Industrial capacity growth seems to be higher at 5.5 per cent. While, coal production went up by 117 per cent, cement production increased by threefold, finished steel went-up by two-fold, electricity increased by fivefold and production of crude oil increased.
* In transport, the rate of annual growth was at 3 per cent, road transport and air transport witnessed acceleration.
* Nominal interest rates moved up significantly and numerous tax concession came to be accorded to the savers.
* The external assistance in 1966-1967 was 4.5 per cent of GNP and external debt by 1967-1968 formed 27 per cent of the GNP. By 1983-84 the former had come down to 1.5

per cent of GNP and latter to 16.9 per cent of the GNP. In 1967-1968, debt servicing charges were 18 per cent of current account receipts and by 1983-84, they constituted about 7.6 per cent of the receipts.

* Punjab, Haryana, Maharashtra, Andhra Pradesh, Gujarat, Uttar Pradesh, have been showing higher growth rates higher than population growth rate.
* Inflation too showed an upward trend during the period despite fiscal discipline.
* The special emphasis in policy during Mrs. Indira Gandhi's period seems to have been on social justice. This was sought to be implemented through a number of anti-poverty programmes, special schemes and measures for tribals and the scheduled castes, discriminatory bank loans based on the criteria of low-size, the self-employed, neglected sectors etc. Since during the past decade food supplies have been rising the national rural employment scheme has been formulated. Minimum needs programmes have been brought in. Together the full impact of all this has to be seen in the movement of the proportion of people below the poverty line.

Growth rates : key indicators

Selected Indicators	Average Annual Growth between 1950-51 & 1965-66	Average Annual Growth between 1965-66 & 1984-85
Area	1.3	0.6
Irrigation	2.1	2.8
Area under High Yield Variety	—	20.7
Furtiliser Consumption	17.6	13.5
Pesticides Consumption	7.0	14.1
FARM MECHANISATION		
Tractors	12.7	15.2
Oil Engines	13.9	11.8
Electric Pumpset	23.7	12.9
Electricity Consumption in agriculture	16.0	13.3
Foodgrains production	1.8	4.0
Per hectare yield	1.3	3.4
Industrial Production	7.6	4 5
Exports	2.0	14.8
Imports	5 3	14.0
BANKING		
Branches	3.6	10.8
Deposits	8.4	18.2
Credit	9.8	17.4
Priority Sector	—	37.2
PRICES		
Wholesale Prices	2.9	8.9
Consumer Price Index	3.6	7.9
NATIONAL INCOME		
Real National Income	3.3	3.9
Per Capita Income	1.2	1.6
Gross Capital Formation	10.7	13.8
Gross Domestic Savings	9.5	14.2
Net Savings	9.6	14.5

Record production by Rashtriya Chemical Fertilizers

THE RASHTRIYA CHEMICALS AND FERTILIZERS (RCF), a public undertaking under the Ministry of Chemicals and Fertilizers, has achieved production and exceeded the production targets record during April 1984—January 1985.

During this period, the total production of Nitrogen at 247164 metric tonnes exceeded the target by 5 per cent.

The production of phosphate at 83486 metric tonnes and potash at 35145 metric tonnes were 4 per cent and 6 per cent higher than the targets fixed for these months.

The company produced 32919 metric tonnes of methanol during this period exceeding the target by 11.4 per cent.

Another significant achievement of the company has been the capacity utilisation of 91 per cent of nutrients during the period. In the case of methanol the capacity utilisation has been 109.7 per cent.

The production records during these 10 months have been a considerable increase over the corresponding period last year. In the case of nitrogen the increase has been 2.6 per cent, phosphate 7.6 per cent and potash 6.4 per cent.

The Thal Super Fertilizer Project of the RCF, consisting of two ammonia plants of 1350 metric tonnes per day each and three urea plants of 1500 metric tonnes per day each is already completed. The trial production from the first ammonia plant has already started. The plants have been commissioned in record time and without any cost over-run. □

Working group on 20-point programme

MINISTRY OF PLANNING has set up a 20-Member Working Group to study the development of indicators|indices for tracking the progress of new 20-point programme. Dr. K. C. Seal, Director-General, Central Statistical Organisation (CSO) will be the Chairman and Dr. P. P. Sangal, Additional Director, CSO the Member Secretary of the Working Group.

The Working Group will take stock of the present work being undertaken by the State Governments and Central Ministries and would make concrete recommendations for development of suitable indicators|indices relating to the 20-Point Programme.

The Working Group has been set up in pursuance of the recommendations of the Sixth Conference of Central and State Statistical Organisation (CSSO). □

Why urban economic inequality ?

Harbhajan Singh

There is a greater need to understand the various forces strengthening the economic drift to grapple with the ever widening inequality of income of the people. It seems the firm commitment by the government regarding "justice, social, economic and political....Equality of status, opportunity and income...." are not only conveniently forgotten but even the honest protestations are hardly made, laments the author.

ECONOMIC INEQUALITY IS ONE of the most striking features of our pattern of living—unequal distribution of wealth and income being its two broad facets. The inequality once generated tends to perpetuate and widen itself. Consequently, a vast majority of people just manage to survive in conditions of abject poverty, a few privileged ones wallow in the lap of extravagance.

Magnitude inequality

The development economists suggest that the inequality continues to increase until the weight of non-agricultural sector reaches 60 to 70 per cent of the total labour force. The leaders of independent India were already aware of this socio-economic challenge. They perceived the consequences of the increase in the magnitude of economic inequality as a result of the combined effects of the proposed organisational structural and institutional changes. They, therefore, sought to give clear directions in the Constitution of India itself. The preamble sets before us an ideal of social justice. The Directive Principles of State Policy enjoin upon Parliament to pursue a clearly demarcated course that would be conducive to social and economic uplift of the country as a whole.

When the framers of national development priorities embarked upon the experiment of democratic planning in the early fifties, they were clear about the goals. They aptly formulated, among others, the two main objectives of the planning, that is (1) to increase production in order to achieve higher levels of living and (2) to reduce inequalities in wealth and income so that "the operation of the economic system does not result in concentration of wealth and means of production to the common detriment." It was envisaged that the development in agriculture and industrialisation of the economy would lay a firm base for future increase in productivity and the emerging reward structure would be largely equitable and, thus, based on social justice. In this connection it was thought that the 150 years' experience of industrially advanced economies regarding economic development and equitable distribution would be of immense help and guidance. Alas, this dream stands shattered on both the counts.

Slow and misconceived growth

The pace of economic growth in India has been slow and rather misconstrued. The comprehensive land reforms have not been rigorously implemented. This worsened the situation for the rapidly growing poor. Those who do not have 'natural' access to work on land or other productive assets are either forced to migrate to urban areas in search of jobs or reconcile themselves as landless workers. The gap between the owner farmers and the share-croppers has suddenly started widening with the introduction of technological innovations by the former, rise in population pressure among the latter and the phenomenal inflation affecting both in sharp contrast.

Rural to urban migration largely takes place through the migrants' entry into the informal urban sector,

because a very large proportion of these distress migrants are unskilled, illiterate and devoid of achievement motivation. The bulk of the urban population constitutes the ignorant, illiterate, downtrodden, superstitious and extremely poor people. Extreme poverty accompanied by high incidence of unemployment and lack of any social security provision whatsoever, often converts their poverty into a state of complete destitution.

The competitive characteristic of the urban informal sector provides more equitable distribution of income within the sector at an inadequate and stagnant standard of living. On the other hand, the oligopolistic and privileged modern sector exhibits a very large magnitude of economic inequality within it. The widening income differentials between the urban informal sector and the modern sector continues to cause a deterioration in the distribution of personal incomes. Moreover, the rules and the institutions which determine how the people constituting the urban informal sector get work, are hardly operative. Largely through the efforts of their inmates they get employed in manual, unskilled, irregular and casual jobs. In the latter case, they work on daily-wage basis wherein neither the tenure nor the place of work is fixed and generally they move from place to place, from jobs to jobs and from one employer to another in search of jobs. Being mostly unorganised they face unstable working conditions and are often discriminated against. The work offered involves little on-the-jobs training and, therefore, even after years of experience these workers remain totally unskilled and, therefore, their future prospects remain bleak.

Inadequate employment statistics of the unskilled

Besides, in large scale manufacturing units, a nefarious practice has come to stay in a very big way, that is, a large proportion of the jobs in these factories are accomplished through contractors who bring their own labour. Although these workers may have continuously served the premises for long, they are never reported to be on the rolls of the factory. Thus, the statistical returns submitted to the government departments, particularly the Annual Survey of Industries, remain grossly inadequate as far as employment statistics of the unskilled labour are concerned. Any accident, minor or fatal, befalling these unfortunate victims is none of the responsibilities of the managements of these units. Since these units deal with the contractors direct, they refuse to be accountable for such mishaps. Thus, the artefact to cover the day-to-day accidents and subsequent legal-cum-labour complications thereof, spells an inescapable doom for those whose precarious economic conditions entrap them into this inhuman captivity. The situation gets further tangled on these labourers' accepting advance from the contractor in order to temporarily relieve themselves of the distress situation which are so frequent among these miserables of the urban informal sector.

A little close to the grossly inadequate and stagnant living conditions of the urban informal sector starts the lowest among the lower middle category beginning with wayside vegetables and fruit hawkers and unskilled employees working in the private corporate sector, government departments and public undertakings. They are followed by petty shopkeepers, small producers, primary school teachers, technicians, repairers, para-engineering personnel, para-medical personnel, retailers and small manufacturers. A fairly large number of these are self-employed. One dominant characteristic of these self-employed is that their earnings are an amalgam of the rewards accruing to their labour and capital invested by them. They too are hardup as compared to the privileged category.

The state of privileged ones

The privilege category includes big entrepreneurs and senior administartive, higher technical and professional employeees. They generally possess markedly superior education, training and experience. Most of them have undergone such training in the modern techniques of production as are scarce and hence highly rewarding. In the process of education and training at prestigious educational institutions and through mass communication media exposures at homes, most of them acquire scientific out-look, get socialised and imbibe cultural refinements. Because of their superior qualities, both of 'nature' as well as 'nurture', they either engage themselves in or get selected for the top jobs. These jobs are not only highly rewarding at the initial entry points but also offer bright promotional avenues, better working conditions and more of security often being reinforced by strong professional associations. By virtue of their status, wealth and political power they dominate in every sphere of life.

In this category the entrepreneurs engaged in trade, commerce and manufacturing need special mention. Their continuous prosperity dates back to the shortages in the consumers' good during the days of the second world war and the partition of the country. Price controls were reinforced to combat these acute shortages. The shortage gave birth to new shortages which led to new price controls. Inflation stood rampant. While the controls stimulated large scale blackmarketing, the inflation resulted in a direct transfer of income from the working class to the entrepreneurs and the self-employed. Thus, economic inequality increased. The development programmes initiated during the five year plan aggravated economic inequality. The process of economic development entailing iduced consumption and induced investment has widened the economic inequality. In order to meet this additional demand for goods and services, the entrepreneurs who were able to undertake initial investment received facilities and incentives to expand their units and thus grew rich. Such as did not possess the requisite capital or did not do so slided back. Thus, the gap between the rich and the poor further widened with the passage of time.

Moreover the demand for goods and services created by the flow of strikingly uequal incomes has drawn resources away from the production of essential consumers' goods to the prestigious luxury items. The production of these items obviously required a higher degree of mechanisation leading to a higher ratio of profits to wages and a consonant pattern in the ratio of executive salaries to workers' wages. And this has resulted in the creation of fewer jobs wih a given magnitude of investment. Also the increased demand for conspicuous consumption has resulted in the continuous profitability of low priority investment.

Ineffective controls

The controls are generally not properly enforced. This leads to new avenues for corruption, smuggling and blackmarketing. By bribing politicians, immunity from law is claimed. The entrepreneurs have been evading taxes and excise duty in a big way. They obtain licences, credit facilities and large number of other favours by bribing the bureaucrats and the members of the ruling parties at centre and states. The government policies have systematically and continuously favoured these and other professional entrepreneurs. The black marketeers, smugglers, hoarders and other criminals have their political patrons. So much so that they are received as important chief guests at the most prestigious social and religious functions. There is no stigma, whatsoever, against these people. This is how the growing economic power is being captured to subvert political power at all the levels—centre, states and local bodies. The entire economy thus presents an ugly picture of gross misrule and misconstrued economic planning.

Instead of rapid and systematic agricultural development and rural reconstruction calling for suitable organisational, structural and institutional changes, substantial industrialisation by commissioning intermediate technology, the development strategy has remained highly capital intensive and urban-industry oriented, notwithstanding some ad-hoc and piecemeal measures for poverty eradication, rural reconstruction employment generation, etc. These measures left much to be desired. Moreover, import substitution syndrome, relative neglect of agriculture, haphazard rural development programmes and colossal wastage of skilled human resources led to further deterioration in the system. The gradually expanding public sector remained highly centralised and it has done little to change the distribution of income. On the other hand, it has been used by the vested interests to reinforce their positions, and, thus aggravated the income inequality.

Ever growing inequality of income

Despite significant growth in some sectors of the economy during the post-Independence period, there is little controversy about the existence, perpetuation and widening of economic inequality in the country, particularly in urban areas. It is here that the dynamics of change has most vividly been felt. The Report of the Committee on Distribution of Income and Levels of Living remarks, "The wide range of variation that one finds between the top and the bottom tenths of the population clearly reveals the existence of concentration of economic power in the country in its most generalised form". The Fourth Five Year Draft outline also admits, "Another area where our effort has so far been feeble and halting, is in narrowing the disparities in income and property ownership". A study conducted by the National Council of Applied Economic Research observes that the bottom 50 percent of the households in India accounted for a mere 21 percent of income in 1975-76. In the same year the top 10 percent of the households received as much as 34 per cent of the income. A World Bank Study based on the data collected from 66 countries during the period 1950-1971 compared the shares of income accruing to the bottom 50 percent and the top 5 per cent of the households. In India it was 19 per cent and 25 per cent respectively. The corresponding figures for Pakistan were 28 percent and 18 percent; for Bangladesh these were 27 percent and 17 per cent and for Sri Lanka, these were 25 per cent and 19 per cent. Hence, it appears that income inequality in India is more acute than in the neighbouring countries and the imbalance within the country has, perhaps, steeply deteriorated during the last few years. Besides, the earlier firm commitments by the government regarding "Justice, social, economic and political.....Equality of status and opportunity......" are not only conveniently forgotton but even the honest protestations about redistributive intentions are hardly made.

Economic inequality is a complex phenomenon. There is the Gospel that the economic inequality is preordained and hence inevitable. According to this fatalist belief any autonomous reduction in it will be short-lived. Others indicate that the people can improve their lots and social action can significantly change their relative economic positions. They believe that income inequalities are largely a consequence of voluntary choice under organisational, structural and institutional constraints within which an economic system operates. They, therefore, suggest that the economic inequality can be reduced only by changing the social order. Nevertheless, the problem defies a direct scientific explanation. Factors governing the distribution of wealth, income, and earnings vary considerably. Ability, chance, inheritance, education, screening of productive potential and the role of organisational, institutional and technological variables have been found to be related to earnings differentials in the available literature on the subject. Despite multiplicity of approaches adopted to examine the causes underlying economic inequality, a reliable, systematic and comprehensive exposition is yet to come by.

The problem is so complicated that even if the attention is focussed on income from work only,

(Contd. on page 29)

What price this development ?

K.D. Nautiyal and G.N. Pandey

Many projects are being executed in our country for the development of certain areas. The authors point out that the families uprooted from the project areas are not getting a fair deal. They suggest that all efforts should be made to see that the ousted families are settled economically as well as socially.

DEVELOPMENTAL EFFORTS being made in various regions of the country have both right and dark aspects. Bright aspects of the development relate to additional production, rise in incomes and higher consumption patterns of people, while dark shades pertains to sacrifices made by displaced persons. They have to change their occupational pattern and their customs and culture start changing too. These intangible costs are hardly taken into account while formulating projects and plans. Sacrifices made by the inhabitants are also not compensated even after achieving a higher level of development and incomes because of trade offs in the economy in which stronger elements (sections of people) apportion major share of development.

In the district of Mirzapur, which has the distinction of locating prestigious high capital intensive projects like Rihand, Dam, Obra Thermal power project, HINDALCO, Churk and Dala Cement Factories, etc. not only the people were uprooted but also cultural thread was threatened. Interestingly, the area is rich in the availability of minerals, minor forest produce and other natural resources but the impact of development on local people has not been to the desired extent and the local inhabitants continue to remain backward.

This is because overall perspective of the economy does not give due attention to the sections of communities and areas which are going to be adversely affected due to the development process.

Adivasis

The present analysis is based on a field study of adivasi area of the Mirzapur district. As many as 13 Adivasis communities are found in the district, who are (1) Kols; (2) Maghwars; (3) Kharwars; (4) Cheros; (5) Panikas; (6) Bhuiyas; (7) Dhangars; (8) Agarias; (9) Pahris; (10) Kirwas; (11) Patharia; (12) Ghasias; and (13) Parahiyas.

Although, these tribes have their own specialities in respect of their traditional skills, social customs, etc. and therefore should have been included as scheduled tribes, have however been included only as scheduled castes in the censuses.

Safeguarding local interests

The authors of this paper on the basis of observations and interaction with the people, have come to the conclusion that the development that is taking place in the area did not take into consideration the specific requirements of the people. These adivasis

have not only to compete with other people for their living but have also lost their value possessions such as land, social harmony and peaceful environment. Two aspects must find attention while formulating any schemes for any community/tribe.

1. The natives have their own culture and customs. New developmental efforts should therefore be consistent with the customs and culture of the people.

2. The development programmes that may be taken up for the area should not dislocate the life structure of the people and lead to harmful changes in their pattern of living and occupations.

The present study was conducted in two project areas of Mirzapur, viz the Aapara Thermal Power Project set up by the U.P. State Electricity Board (UPSEB) and Singraul Thermal Power Project set up by the National Thermal Power Corporation (NTPC). These are big power projects with installed capacities of 3130 MW and 2000 MW, respectively. The land acquisition in these two projects was about 53000 hectares involving 18 villages affecting 1281 families :

Adivasis dilemma

The land was acquired at the rate of Rs. 4500 per acre. However, a plot of land was to be provided to every oustee for construction of a house. In the matter of providing employment to the displaced persons the provision was thus in the U.P. SEB project those who had lost more than 50 percent of land were to be given priority in employment while in the case of the NTPC the priority was to be given to those who had lost more than one acre land and received compensation of less than Rs. 50,000.

During the course of the study, it was found that in the NTPC project, out of the 24 displaced adivasi households, 13 families had no land while nine families had land below 1 acre. Only 2 families had land holdings between 2 and 5 acres. It means that according to the projects rules about 90 per cent of the displaced families in the NTPC project would not be benefited from the recruitment policy of the NTPC project. In the UPSEB project area also more or less the same story is repeated. Here, of the 22 Adivasi displaced families, 9 had no land while 6 had land less than 1 acre. Broadly this depicts the situation of poverty of adivasis. Due to the secluded life and near subsistence level conditions it is difficult to imagine that they will pull out themselves from the quagmire of poverty.

One cause leads to another. Poverty, diffidence, fatalism and illiteracy go side by side. Even today, the Adivasis are mostly illiterate. Among the displaced persons of the selected families in the two projects it was found that as many as 95 per cent were illiterate.

In such a situation, compensation would not produce the same socio-economic situation as existed before. This situation can be corroborated from the following table which shows that the occupational structure has undergone a serious change to the detriment of Adivasis in the Matzapur area.

Table

Changes in the occupational pattern of adivasis in the project areas

Sl. No.	Activity	Employment	
		Past	Present
1	2	3	4
1.	Cultivator	62 (59.05)	—
2.	Agricultural labour	13 (12.38)	—
3.	Casual wage earners in non-farm activities	30 (28.57)	74 (89.16)
4.	Self-employed	—	3 (3.61)
5.	Regular salaried	—	6 (7.23)
	Total workers	105 (100.00)	83 (100.00)
	Unemployed (as a result of displacement)		22

NB : Figures in parenthesis indicate percentages to the respective totals.

The table shows that agriculture sector has completely vanished from the scene and the erstwhile cultivators have now been reduced as casual labourers. The location of the project, interestingly, has made about 22 per cent of the working persons wholly unemployed. The Adivasis are now obliged to give up their professions and are left at the mercy of contractors for jobs. It was revealed that so far in the two projects, only a few persons could be provided jobs.

These people are illiterate, non-pushing and do not fit in the competitive world because of historical, economic and social reasons. Hence, they are also not wanted because they do not possess the skills are required in the projects. In the casual employment also, mostly outsiders are provided jobs and the local Adivasis stand as mute observers of their plight. Unless, the development takes into account the socio-economic requirements of the displaced persons, new developments may prove inimical to their interests. Advasis are free children of forests. They feel the jungles as their own estate and rightly, therefore, they feel that they have a right to the use of the forest products.

Forest produce like Tendu leaves, Choronji, Mahua, honey etc. abound in the area. In a recent study, it was found that there is some exploitation of the Adivasis who were involved in the collection of tendu leaves. This is a seasonal operation spreading over two months. An adivasi family gets around Rs. 6 a day for collecting Tandu leaves. The leaf which is used for making bidi is sold at a very high cost, leaving a wide margin of profit to the contractor/pr[illegible]

cer. The same degree of exploitation occurs in the case of other minor forest produce also like Chironji, Anwala etc. These are purchased at a throw away prices in the villages and sold at a high prices in the market.

Suggestions

One of the main cause of exploitation is that the illiteracy is so widespread among advisasis that a large number of them cannot even count the small amount of money they get in exchange of their labour. This exposes them to further exploitation and malpractices. In this small paper, however, it is not possible to discuss all aspects of the tribal economy but we hope some suggestions would be relevant.

First, while formulating a project there should be adequate and clear cut provision for providing land to the displaced persons at suitable sites. Second, when weaker sections like Adivasis are displaced the project should have schemes to educate and upgrade the people so that they may also be benefited from the schemes of the project. The project authorities should provide employment to all able bodied persons in their projects so that the displaced persons feel that the project belong to them. It would not increase the cost much but the social benefits would be very high.

Third, in the case of minor forest produce. the processing plants should be set up in the area itself so that employment opportunities may be generated in the area. It will also reduce economic costs of the produce. Bidi making may also be encouraged among adivasis as a cottage industry. There is ample scope for processing the local minor forest produce on the cottage industry basis.

Historical and religious places of these areas should be developed independently.

Fifth, there is also need for studying the socio-economic fabric of different tribes of Adivasis with respect to their traditional skills, scope for resource based industries and the potentialities for manpower development of the tribes.

Lastly, the terrain of Mirzapur and adjoining areas call for specific researches for agricultural. and animal husbandry operations.

Higher LIC business

THE LIFE INSURANCE CORPORATION of India Introduced a new business of Rs. 3649.86 crore under 18,72,604 proposals in individual assurance business during April 1984 to January 1985. This marked an increase of 20.3 in sum proposed over that of the corresponding period of last year.

The Southern Zone with an introduced business of Rs. 1142.88 crore and 6,27,394 proposals emerged on top, followed by the Western Zone with a business of Rs. 818.25 crore and 4,12,511 proposals. The Eastern, Central and Northern Zones introduced a new business of Rs. 597.49 crore, 566.27 crore and Rs. 524.97 crore respectively. The number of proposals introduced by these Zones stood at 3,32,832, 2,73,567 and 2,26,300 respectively.

Amongst the Divisions of the Corporation, Bombay Division stood first with a sum proposed at Rs. 351.08 crore, followed by Calcutta and Delhi with sums proposed of Rs. 184.83 and Rs. 165.27 crore respectively.

In respect of number of proposals, Bombay Division stood first having introduced 1,52,870 proposals, followed by Calcutta and Bangalore with 1,03,987 and 74,681 respectively.

Hyderabad Division has registered the highest growth rate in sum proposed with an increase of 42.6 per cent over that of last year followed by Indore and Ahmedabad Divisions with percentage increase of 35.1 and 34.6 respectively. □

Action against blackmarketers in 1984

FOLLOWING SUSTAINED DRIVE against black marketing and hoarding by unscrupulous persons indulging in malpractices in trade of essential commodities such as wheat, rice, sugar, edible oils, cooking coal, controlled cloth etc. during the year 1984, 8,677 persons were arrested, 4,854 persons prosecuted and 1,072 persons convicted and punished by courts under the Essential Commodities Act, 1955 which provides for the regulation of production and distribution of 67 essential commodities.

According to the latest information available with the Union Department of Civil Supplies, which coordinates and monitors action taken by the States under this Act, over 2,58,230 raids were made in the premises of alleged unscrupulous traders, and essential commodities worth Rs. 972.46 lakh seized during the year 1984.

The Essential Commodities (Special Provisions) Act, 1981 has plugged the loopholes in the law and made the penal provisions of the Essential Commodities Act more stringent to provide, among other things, for summary trials for all offences under the Act, set up Special Courts for this purpose and made all offences non-bailable.

Besides, in order to prevent unethical trade practices like hoarding, blackmarketing, profiteering etc. Prevention of Blackmarketing and Maintenance of Supplies of Essential Commodities Ordinance was promulgated in October, 1979 which was later on converted into an Act of Parliament in February 1980. Since the enforcement of this Act, 774 persons were ordered to be detained by various State Governments till December 31, 1984.

Floods and water management

Sreelekha Basu

More than a tenth of our total area is prone to floods. To reduce the havoc caused by flood, water management has to be improved with the help of a sound data base, efficient data communication system etc. The author emphasises that we cannot afford to stay behind in this crucial area which is the key to accelerated growth and self-sufficiency.

IN INDIA, WE HAVE to live with flood and drought. More than a tenth of our total area is prone to floods. The Central Government has been spending Rs. 1000 crores on flood relief. The average annual quantifiable monetary losses suffered due to floods in India, have been estimated at Rs. 1200 crores. The strategies needed to meet the deficiencies (in quantum and time) or to tackle the excess of water availability during monsoon in different regions, are different. But for both, it is necessary to assess the water resources available (expected|anticipated) and water balance studies carried out for effective water management in the region.

Beneficial uses of our water and soil resources are the most important aspects of comprehensive river-basin-planning, which leads to assessment of water resources potential in the basin and creation of facilities for flood water storage, for irrigation reservoirs| channels, for generation of electricity, for meeting the scarcity of water in drought prone areas| districts (by exploration in the area and by importing from surplus basins), etc. These would necessitate services of water management experts, for a coordinated approach in sorting out problems relating to needs for flood prevention, water conservation, drainage, irrigation demand, non-agricultural water requirements, damages due to erosion, sedimentation, etc. for the development, utilisation and disposal of water in the most economically feasible manner.

*Views expressed are author's.

It has been suggested by experts that a national water grid is the only answer to this and the surplus water of different basins should be used to augment supplies to the deficit areas. This would need proper planning, funds, organisation and a base information system (DBIS).

Irrigation requirements

India has the largest irrigation system in the world and the second largest irrigated land, next only to China. Irrigated area prior to independence covered only 22 million ha, compared to the present 60 million ha. Our foodgrains production has gone up by about three times since independence. Cropping pattern has diversified and area under cash crops has recorded steep increase at the cost of foodgrains. Average yield for irrigated wheat and rice, (our main irrigated food crops), are still very conservative.

If the total water resources available in our country is properly managed, we can irrigate most of our irrigable land and also meet other water demands. The total surface water resources in India has been estimated at about 1500 MHFT, of which only a little over a third can be beneficially utilised, for consumptive use. Presently, storage facilities of only about a tenth of our surface water resources are available within the country. Limited storage facilities for most of our river-flows, and particularly in two of our major river basins (Ganga and Brahmaputra), inter-State disputes on water-sharing|dam-heights etc. utter lack of discipline in the effective implementation of major, medium and multipurpose (irrigation) projects, have resulted in avoidable increase in the total cost of our

irrigation projects by three to five times. These have also deprived us of an enormous quantity of agricultural products every year, which could have been achieved if at least some of our internal disputes were sorted out in time and important projects completed within reasonable time limits.

National water grid

The concept of a "National Water Grid", envisaging Ganga-Cauvery link was put forward by Dr. K. L. Rao in the early Seventies. It was then decided that drought-prone areas needing water on a long term basis should be identified along with the water-surplus areas, and a scheme for transfer of water to drought areas might be evolved. Later, Dr. Rao suggested that surplus waters of Ganga and Brahmaputra must be used to augment supplies to deficit basins, so that semi-arid zones could be converted into food-yielding land, by providing irrigation water. He also recommended flood water detention in reservoirs, particularly in the river basins of U.P. and Orissa, as also increased drainage facilities in West Bengal to save crops from recurring floods.

Providing irrigation water to scarcity areas in the Ganga basin exploitation of the Narmada basin in M. P. and Gujarat, providing storage facilities on Sarda and Ghagra-Rapti-Gandak to save eastern U. P. from floods and for conserving water, water conservation projects such as Tehri, Rajghat, Kishan, etc were a few of his plans to meet the growing demand of cereals and cash crops in India.

Several other comprehensive water resource development projects had since been presented. The Garland and Himalayan Canal Project of Shri Dastur and several variations of that Scheme had been put forward by other Expert Groups. The general concensus had been that a national plan for the control of rivers for irrigation and flood control should be evolved, for the beneficial uses of our water resources. The erstwhile Ministry of Energy and Irrigation (Deptt. of Irrigation), followed it up and prepared a comprehensive study on the availability of water and feasibility of creating enough storage. A National Perspective of Conservation of Water and Interlinking Various River Systems was chalked out. It was claimed that the National Plan (as proposed), was the most feasible and would confer the largest benefits at most economic costs, as compared to other alternatives suggested by expert groups.

The "National Plan" had aimed at multipurpose and multi-objective development of our water resources, keeping in view the benefits of irrigation, land reclamation, flood control, hydro-power generation, navigation, pollution control, fisheries development, etc. Domestic and industrial uses of water as well as use of water for irrigation were given high priority. Inter-basin and inter-state transfer of waters were envisaged, keeping in view the needs of the basins States. In drought prone areas, water was assured at least for one crop, and while providing irrigation facilities to water-scarcity areas maximum production per unit of water was aimed at while fixing the water demands per ha. Flood control was accepted as a major objective. Soil conservation, catchment protection and afforestation were envisaged as an integral part of water development in upper catchments.

Subject to making necessary provisions for minimum needs of irrigation (consistent with efficient water utilisation), where conflict between hydro-power generation and irrigation would arise, the Plan had also aimed at maximum power generation. The National Perspective envisaged only additional water development and use, beyond what was already feasible within the normal framework of all existing agreements between and among the States, as also of the existing treaties with the neighbouring countries.

The main aim was to increase the benefits to one and all beyond those provided by the existing agreements or treaties. Detailed outlines of the development of peninsular rivers were also prepared, suggesting ways and means of diversion of west-flowing rivers in Kerala, Maharashtra, Gujarat and Tamil Nadu, diversion of surplus water of Mahanadi and Godavari to water short rivers (i.e. Krishna, Pennar and Cauvery) and for irrigating coastal areas in Orissa, interlinking of a few other west-flowing river north of Bombay and south of Tapi (viz Ulhas, Vaitarni, Purna, Ambia, Auranga, Damanganga and others) and interlinking of Ken with Chambal (tributaries of Yamuna).

Technical committee

In 1976, the Government of India had set up a Technical Committee to examine the feasibility of eastward diversion of the west flowing rivers of Kerala and Karnataka, to Tamil Nadu and drought-prone areas of Karnataka. Assessment of surplus water availability was carried out in the four southern most river basins of Kerala (Vamanapuram, Achencoil, Kallada and Karamana), and in four river basins in Karanataka (Netravathy, Varahi, Mahadayi and Barapole). Ground water potentials for these basins were also assessed, along with water available from regeneration flow. Simultaneous studies were conducted to estimate the current water utilisation and new uses planned, together with anticipated demand in the foreseable future, both for consumptive and non-consumptive uses.

Based on these investigations, recommendations were made by the Technical Committee about the surplus water available for diversion from Vamanapuram, Achencoil and Kallada basins of Kerala and from Netravathy, Barapole and Aghanashini basins of Karnataka (the last one as indicated by Karnataka). The Committee made various recommendations on the diversion of surplus water, and instructed Tamil Nadu and Karnataka to frame suitable proposals for harnessing the surplus available for irrigating areas in their drought prone districts, to the east of the Western

Ghats. For Mahadayi basin, the Committee suggested installation of two units of hydel power plant, of 70 MW each, and irrigation of 500 ha in Mahadayi basin and further divert the surplus water to Malaprabha basin to irrigate drought prone areas in Belgaum.

Thus for a few west flowing rivers, the Committee recommended diversion of a limited quantity of water to the east, as on account of the very short distance traversed by these rivers (from origin to the coast), and the nature of the terrain, potential available were not being fully utilised. For other rivers, the Committee suggested detailed studies to be conducted on a time bound schedule by the concerned States. It was also recommended that Tamil Nadu should initiate dialogue with Kerala on a bilateral basis for diversion of Kerala's surplus water to Tamil Nadu. This was initiated and some progress has already been acheieved in this direction.

NWDA

National Water Development Agency (NWDA) was set up in Jully, 1982 to give shape to the outline of National Perspective for Water Resources Development. The NWDA follows up the work of implementing optimal utilisation of water resources in the Peninsular Rivers, through construction of conservation storage reservoirs of optimal capacity and transfer of water by a network of interlinks from surplus areas to water-short and drought-prone areas of south India.

The scheme, when implemented is expected to create about 15 million ha of additional irrigation potential in the Peninsula over and above the present assessment of 113 million ha in the country, by increased utilisation of surface and ground water resources. During the last two and half years, the NWDA prepared yield studies at few sites in Mahanadi and Godavari basins, undertook studies on assessment of surface and ground water potential in various sub basins, collected detailed hydro, hydromet, landuse and soil statistics from Mahanadi, Godavari, Krishna, Cauvery, Pennar, Vaigai, Southern tributaries of Yamuna and from west-flowing of rivers of Kerala, Maharashtra, Gujarat and Karnataka.

Water resources, utilisation and water balance studies have been conducted in the drought-prone areas of Telengana, Madhya-Maharashtra and Marathawada region, and in Rayalseema area and on a few subbasins of Godavari. Surveys of west-flowing rivers, south of Tapi and north of Bombay, as also of a few tributaries of Yamuna and Mahanadi have also been conducted. The main objectives are to locate possible reservoir sites and inter-connecting links for augmentation of water conservation, with special reference to flood waters and to transfer the surplus to water-short and drought areas. Detailed water management studies relating to quantum of water available in our Peninsular River Systems, which can be transferred to other basins|States, (after meeting reasonable needs of the concerned basins|States), in the foreseeable future, have been conducted by the NWDA.

Flood study

Flood plain zoning in various flood prone sites of different river basins is very important for water resources studies. Indentification of areas exposed to flooding and determination of inundated land through data collected from various sources, including those from remote sensing techniques along with determination of areas under various land uses, to understand relation between precipitation and the resultant runoff, are integral parts of such studies. Flood prone areas undergo changes continuously, with every flood, and to understand these processes it is essential to monitor the flood plains and record the changes over time. Aerial photographs are the best tools for bringing out various aspects of flooding and for such monitoring work. Flood menace can be reduced to a great extent and the surplus water diverted for use during dry season (or to water-scarcity areas), if such monitoring with the help of a network of aerial-photographs|digital-data and data collected through conventional means are introduced on a routine basis.

In any flood study it is essential to know the volume of flood that has to be regulated and diverted for storage, to determine courses of flood control. Area information data obtained through landsat along with water depth data collected on ground will furnish the volume information, with reasonable degree of accuracy. Remedial measures for water-logging of flood waters in depression areas can be initiated, mainly through bettter maintenance of existing drainage systems and constructing additional link drains, culverts, etc. and also by impounding the excess water and diverting it to water-short areas for beneficial use.

Some experimental studies were initiated by the Deptt. of Science and Technology, under their Scheme on Natural Resources Data Management System (NRDMS), in 1981, to make an assessment of the magnitude and reliability of our natural resources data and for a timely access of an integrated and evaluated resource data base to our planners and decision makers. It also aimed to determine the relationship between ground features and their response to remote sensing besides selecton of effective sample sets for classification, for remote sensing data. Various pilot studies were undertaken. One such study was carried out in an intensive test area between Rapti and Gandak in the eastern U. P. to assess the feasibility of the application of remote sensed data bases and others to planning problems like flood plain zoning, land-use planning, surface and ground water development, monitoring of water logging and salinity problems, air and water pollution problems, estimation of vegetal covers, etc. along with evolving methodologies for handling multiple data bases.

The study on flood plain zoning in the basins of Ghasra and Gandak was undertaken by the Centre of Studies in Resource Engineering (CSRE) of the IIT,

Bombay. An eleven channel Modular Multispectral Scanner (MMS) and an aerial camera were used for collection of relevant data and "ground truths" were collected in synchronisation, to correlate actual information on ground with its response to remote sensing by MMS and MSS.

Ground truths were also collected before and after the flight to study the drainage systems and to observe hydrological behaviour of the various streams in the basins of Rapti and Ghagra. Computerised analysis of the data were taken up and valuable interpretations drawn. Other pilot studies were also undertaken (in the coastal and offshore areas in Goa and Visakhapatnam, in some semi-arid regions of U. P and in a few backward and tribal areas in Purulia, Koraput, etc.)- which have completed major portion of their field surveys| investigations and are preparing their reports. The findings would be of immense help for developing networks of natural resources data needed for planning and monitoring of water resource projects and other schemes.

Water management

Floods mainly result from intense and heavy rainfall during monsoon, cloud-bursts, cyclones (mainly in the coastal areas), from landslides blocking stream flows, and inadequate drainage systems. In ninety per cent cases, floods occur when there is heavy precipitation and the river overspills its banks as the linking channels cannot cope with the water flows, or due to some obstruction on the river bed (siltation, landslides. etc.). Drainage congestion, resulting from heavy rains of some blockages, also cause devastating floods. Erosion of river banks, deforestation, sedimentation, water logging, high seatides, inadequate waterways at rail and road crossings, encroachments in flood plains etc. are some other causes of floods in India.

The task of water management in flood prone areas, basins needs in-depth investigations, data collection and validation, data analysis with the help of analytical tools to facilitate quantitative modelling through use of data stored in the Information System, with a view to arriving at some optimal solution, which would prescribe some form of diversion and storage (by various means). This would be adopted to even out the flow and also to conserve our precious water resource for use in water-short regions and during dry seasons.

A mechanism of communication of information from the source agencies in the field to the authorities, has also to be established. For communication, either a radio network or a satellite network may be adopted. Occassionally, a combination of UHF|VHF and Post and Telegraph Leased network is preferred. However, the choice should depend on the nature of communication required by the water management experts, and the topology of the region. Transfer of hydro-met data from field to the data control office, (usually located at a major city), is done by surface mail and through the telephone|telegraph system. These are not suitable for effective management of water resources and some sophisticated transmission network should be set up by the authorities handling flood control projects.

NCF

The National Commission of Floods (NCF) had suggested (1980) that measures, primarily for conservation (like small, medium and large reservoirs, natural detention basins, ground water storage, etc.), which help in moderating run-offs depending on their capacity, should be the first to be considered, for flood management in any basin. It had also been said that to the extent feasible (technically and economically), natural detention basins and reservoirs must be considered as an important component in any package of flood management, as it would ensure maximum utilisation of the water. However, it has been pointed out that the intensity and duration of the rain and the runoff, and the resulting volume of floods would play the most important part in deciding upon if the natural detention basins would serve the purpose of flood moderation, or special measures like embankments, emergency floodways, river diversions and inter-basin transfers would have to be adopted. Unregulated flood water goes waste and causes havoc and miseries.

Reservoir

Storage reservoirs are the best solution for flood water conservation. But for their high cost, reservoirs are usually not planned for flood control only. Most of our reservoir projects do not lend themselves to earmarked flood storage, and only some flood cushioning is allowed. No provisions are usually made for antiwaterlogging and drainage facilities in such projects. Only DVC, Baigul and few other resrvoirs had made some exclusive provision for flood control storage. Reservoirs at Govind Sagar, Hirakud, Rengali, Ukai, Manchenbela, etc. are cases where moderation has been achieved by suitable means.

Usually flood control forms a part of our multipurpose projects, where it is only one of the beneficiaries. However, multiple use of a reservoir implies some compromise between the interests of various components, which are occassionally at variance with one another. Multiple use of a reservoir inevitably results in less benefits for any single use, but it realises maximum benefit for the project as a whole. Any moderated flood outflow must take into account the safety of the downstream area as well.

Reservoirs by themselves are seldom a complete measure of flood control. Inspite of their high costs and long gestation periods, if reservoirs are taken up as package programmes, with other direct benefits along with flood control work, they would be economically viable and also ensure optimal utilisation of water which otherwise goes waste. Acquisition of land for storage reservoirs is rather difficult, but the storage of flood waters is also very important. Possible

orage sites, specially around water scarcity areas are ecessary to harness our water resources for beneficial e. A sound data base and an efficient communica-on system would be necessary for effective and time. ficient handling of our water resource planning pro-ss and for the follow-up scheduling, and monitor-g activities. If the NRDMS project on multiple data use approach to micro-level planning is successfully nplemented, it would go a long way to sort out our ata gaps|deficiencies, as also in evolving methodolo-es for handling such data bases.

In this connection, a mention should be made of the WC|Danish-Hydraulic-Inst (DHI) cooperation in veloping real time flood forecasting model (NAM), r accounting the runoff from rainfall by computer mulation of hydrometeorological events, and rout-g the runoff by hydraulic model. DVC river system s been taken up for field testing of the model. nother real time forecasting system has been install-l in the Yamuna catchment area under a UNDP heme, with the help of data on rainfall, tempera-re and river stage data. A master teleprocessor is ogrammed to coordinate the activities of remote itions. SSAR model used by the US Army Engineer d HEC- 1F model developed by Hydrologic Engi-ering Centre (California) are being studied for eir calibration to suit the mini-computer (HP-00), installed at Delhi for this work. With the imp-mentation of computerised telemetry system, new chniques in remote sensing and automatic data ac-uisition procedures, river forecasting services would iprove considerably and would provide a tool for od routing and rainfall runoff predictions.

Ground water studies

A number of ground water studies undertaken by e United Nations, the SIDA and the CGWB in our rious river basins have made valuable recommenda-ns for water resources planning, where artificial charge of acquifers with flood waters has been look-into. It has been observed that as a result of floods d water-logging from seepage of existing irrigation stems, many areas in our river basins become ater-logged, permanently or seasonally. The reme-l measures recommended include pumpage and use ground water in these areas, lining of canals, better intenance of existing drains and construction of k channels, link drains and culverts. The UN ound water study in the Ghaggar river basin had served that water-logging in the Suratgarh-Baropal pression area could be controlled by reducing the aggar flood water inflow into the diversion canal by using the impounded water for irrigation. The idy suggested diversion of the excess flood water to e sandy tracts in west Rajasthan and used there artificial recharge of the phreatic acquifers. Re-very of diverted water, however, could be started ly within 5 to 10 years after the recharge scheme is en up, as this time period was necessary to allow a significant fresh water layer to build up over the salinated acquifers. The Study also suggested high efficiency irrigation methods (sprinkler and drip), in combination with lining of canals in certain areas for higher crop productivity with small quantity of water. □ (*to be continued*)

Home Computers for Asians in U.K.

A PROJECT TO PROVIDE multi-language versions of home computers is being sponsored by Bradford Metropolitan Council in the north of England to serve the city's 62,000-strong Asian Community. The project, aims to provide computer programmes and keyboards adapted to Hindi, Urdu, Punjabi, Bengali and Gujarati users.

The scheme is being run by Mr. Harnak Singh, one of the Council's computer Programmers, Faiz Nasir, a linguist and Urdu specialist. The council is funding and co-ordinating the Project, but the actual work of producing the programmes has been delegated to information technology centres in Bradford and nearby Halifax, and a computer firm in London.

Work has already begun on the Urdu and Punjabi word processors and a Urdu version of the Basic computer language.

Mr. Harnak Singh said: "Urdu has not been typeset before, and we had to find out what was acceptable to the consumers in Bradford, we intend to produce a word processing package, with basic standard facilities, for schools as well as for the home."

The programmes will be geared to the standard schools computer, the BBC Micro, so that children in the city's 200 schools can be given the opportunity to learn basic computer skills.

Acorn Computers of Cambridge, Eastern England, say that work is underway in India to provide local language programmes for the BBC Acorn computers which are expected to be manufactured shortly under licence in India and supplied to a number of schools. □

Mechanical cart helps farmers

MECHANICAL MULTI-PURPOSE cart called "Krishimitra" devised by the Director of Research Foundation in the Department of Science and Technology, Government of India, is a blessing for the Indian farmers. This mechanical cart can dig five hectares of land in a day and it can be used in all other farm activities also. The price of this cart is approximately Rs. 18,000. □

Devolution of more funds to States

H. Seetharama Rao

Under the award of the Eighth Finance Commission for 1984—89, the States will receive Rs. 38,500 crores from the Central divisible pool of revenue by way of taxes, duties and grants-in-aid to help remove imbalances among them. This is Rs. 17,500 crores more than the amount transferred to the States under the Seventh Finance Commission during 1979—84. The Commission has done a fairly good job of its task which will ultimately help remove the imbalances among the States, says the author.

THE EIGHTH FINANCE COMMISSION has made an earnest effort to help deficit States with increased share from the Union excise duties. The award of the Commission which has been accepted by the Government will benefit the States to the extent of Rs. 38,500 crores by way of taxes, duties and grants in aid during 1984—89. This is Rs. 17,500 crores more than the amount transferred to States under the Seventh Finance Commission award for 1979—84

Modes of devolution

The Government while announcing its decision on the recommendation of the Commission in Parliament has made it clear that it will continue with the interim report recommendations for 1984-85 financial year but will accept the final recommendations for four years from 1985.

The fiscal transfer scheme accepted by the Government confers on twelve States surplus of over Rs. 26,000 crores. The States' share on Union excise duties is being enhanced to 45 per cent from 40 per cent while the share in income-tax has been retained at 85 per cent. Five per cent of excise has been earmarked for deficit States in addition to the five per cent annual growth in the revenue gap grants of these States.

The decision provides for substantial debt relief including write-off. Under the revised scheme, grants worth Rs. 808 crores will be given to 17 States for upgradation of standards of administration and to meet special problems. The Centre will provide half of the annual margin money to States for financing of relief expenditure. The Centre's contribution to margin money will be Rs. 481.50 crores. The annual compensatory grant in lieu of tax on railway passenger fares has been enhanced from Rs. 23 crores to Rs. 95 crores.

The recommendations of the Commission, as expected, have drawn mixed reaction from States. While most of the States have welcomed the recommendations, some of them felt that the Commission has not been fair to their demands. But the fact remains that the Commission has tried to bridge the gap between the chronically deficit States and the fairly better off States.

Most of the recommendations suggested by the Commission have been accepted by the Government except a few that have to be still considered. They included suggestions to merge surcharge with basic income tax from 1985-86, setting up an expert committee for the allocation of cost collection between incometax and corporation tax and to impose penalties and interest on arrears in the divisible pool of incometax.

Benefit to States

Ten States will benefit through the Commission's recommendations that grants in aid to deficit States after devolution should escalate at the rate of five per cent per annum. These deficit States are Assam,

Himachal Pradesh, Jammu and Kashmir, Manipur, Meghalaya, Nagaland, Orissa, Sikkim, Tripura and West Bengal. Rajasthan has been assessed to be in deficit for 1984-85 and 1985-86, thereafter going into surplus. On the other hand, six States will be in surplus before devolution. They are Gujarat, Haryana, Karnataka, Maharashtra, Punjab and Tamil Nadu. The remaining five States—Andhra Pradesh, Bihar, Kerala, Madhya Pradesh and Uttar Pradesh—will come into surplus after devolution.

The grants contemplated for the deficit States are for them to cover their non-plan revenue gaps such as for the payment of Additional Dearness Allowance instalments to bring the DA of State Government employees on par with that of the Central Government employees.

Taking into account the additional DA liability and the annual escalation the deficit States will become eligible for a grant of Rs. 1,555.83 crores during 1985—89 as a result of the recommendations.

The Commission also recommended grants for the upgradation of standards in administration in nine areas. They are police, education, jail, tribal administration, health, judicial administration, district and revenue administration, training and treasury and accounts administration. Grants aggregating Rs. 914.55 crores for this purpose will go to 16 States, barring those in surplus before devolution. Of this amount Rs. 808.08 crores will be distributed in the period from 1985 to 1989.

Debt relief

The Commission recommended debt relief to the States varying from 20 per cent to 85 per cent of the non-plan capital gap as assessed by it. The quantum of money as debt relief recommended is Rs. 2,285.39 crores through the consolidation and rescheduling of outstanding loans and by way of write off.

This debt relief is in addition to a relief of Rs. 117.08 crores involved in the non-payment of small savings loans in 1984-85 recommended in the interim report and reiterated once again.

The Finance Commission award will result in uniform formula for distribution of States' share of excise duties and income-tax. The Centre will continue to contribute half of the annual margin money to States for financing of relief expenditure.

Linking devolution to deficits

The Commission has recommended that five per cent of the net proceeds of Union duties of excise should be set aside and distributed to those States which have deficit after taking into account their shares from the devolution of taxes and duties as proposed by it. This introduces a new principle of directly linking devolution to deficits, rather than dealing with them only through grants in aid under article 275 of the Constitution. While recognising that there could be different views on the merits of this principle, the government has decided to accept this recommendation without creating a precedent.

The Commission has provided a five per cent annual growth in the deficit grants purportedly to make them buoyant. The Finance Commission found the existing financing arrangements of relief expenditure to be basically sound.

At present, 85 per cent of income-tax except the portion representing the proceeds attributable to Union Territories and the Union emoluments, is distributed among the States. The share of the States is retained at the same level. The inter se distribution among the States is partially altered by distribution of 90 per cent of the States' share on a common formula for income-tax and excise duties. Ten per cent of the States' share is distributed as at present on the basis of contribution measured by income-tax assessments attributable to a State.

Excise duty on electricity was abolished from October 1, 1984. The Commission has recommended that the share of each State should be equal to collection in or attributed to State.

Additional excise duties

The entire net proceeds of the additional excise duties on sugar, textiles and tobacco excluding the portion attributable to Union Territories, accrue to the States. The Commission has recommended that the additional excise duties be distributed among States on the basis of equal weightage to State domestic product and its population.

The Commission estimated the gross non-plan capital gap at Rs. 6806.19 crores. It has not recommended any relief for the repayment liability of Rs. 1992.90 crores arising during 1984—89 out of the medium-term overdraft clearance loans aggregating to Rs. 2242.12 crores.

The Commission has left them outside the scheme of debt relief. It has recommended that during 1985—89, the small savings loans should be repaid by the States as per the prescribed terms and conditions. Excluding small savings loans and overdraft loans, the Commission has estimated the net non-plan capital gap of the States at Rs. 3852.64 crores.

In making its recommendations, the Commission was directed to have regard to the consideration such as the resources of the Central Government and the demands thereon on account of civil administration, defence and border security, debt serving and other committed liabilities. The Commission had made its recommendations within the parameters and had done a fairly good job of its task which will ultimately help to remove the imbalances among the States in the country. □

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TOWARDS SOCIAL REVOLUTION
a Case for Economic Democracy
VASANT SATHE

A Serialisation 1

The Alternativ

THE BROAD PICTURE of the national economic scene that would emerge from our model in the productive and distributive fields would be of one homogeneous national sector. The artificial division of the entire national economy into the public sector and the private sector would be abolished. The only two natural sectors would be the organised sector and the self-employed sector.

In the economic model proposed here, the presumption is that the entire labour—in the form of (1) entrepreneurship and organising capability, (2) an intelligent studied contribution by the scientific, engineering and technological experts, (3) managerial skills developed by some members of society and (4) technical, clerical and unskilled potential of the other members—would work cohesively as equal partners and, in the very process of production, the surplus generated would be paid equitably, though not equally, to each category. The chief criteria would be to meet the minimum requirements of a decent living for the lowest category and then to determine what better comforts and, to some extent, even luxuries, can be offered to those whose labour is more skilled or requires higher qualifications on their part.

In our model, there would be no employer-employee relationship because everyone who puts in labour would be a shareholding partner in the organised industrial or trading sector. The shareholders would annually elect their representatives from among themselves to the board of management who would represent the three basic categories, namely, managerial, technical and non-technical.

The number of representatives of labour would be one-third of the total number of the members on the board of management.

The other one-third would be the nominees of the financial institution, the party in power at the National level and the party in power at the State level, in equal proportion. Thus, the representatives of the people would be involved in every organised industry to participate in and to oversee the implementation of the policies and programmes announced by th government. It would be the duty of the representati or representatives of the financing institution to ensu the proper utilisation of the finances advanced invested.

The remaining one-third would be representativ of the entrepreneur, i.e., the conceiver of the indust and also its organiser. The entire working force wou be organised on a pattern in which there are managi committees from the top level to the shop-floor lev and persons are assigned tasks for which they a accountable.

Although the basic structure of salaries and wag would be fixed, other benefits, which would be substa tial, would be linked entirely to productivity. Sin the entire labour force would know that there is question of anyone manipulating the real surplus cheating in any other manner and all its membe would have a full stake, they would evince intere and confidence in the successful working of a pla or industry on which their livelihood as well as bette ment would depend.

The market mechanism of demand and supply a the resulting pricing system form one of the greate inventions of mankind. A just and equitable econom organisation and policy should take advantage of But what tends to make the market and pricing syste unjust and greatly iniquitous are two major deviatio from ideal and democratic economic norms. One devi tion, on the demand side, is the serious maldistributic of income and the lack of purchasing power on tl part of millions of people, who, therefore, cann express their real needs in terms of market demar and cannot cause or provoke the supply mechanism produce and supply those real needs. The oth serious deviation, on the supply side, which distor the market mechanism and nearly makes a tot nonsense of it, is the emergence of monopoly (a sing supplier of a particular item) or oligopoly (or fe market-dominant suppliers of that item). Such mon polistic or oligopolistic suppliers can and do hold th society to ransom by restricting the supplies, chargin

prices totally out of line with costs and reasonable profits, colluding with each other to allocate markets to each other and use other foul means of reducing consumer welfare and increasing their own.

Hence, the maldistribution of income and the existence of monopoly-oligopoly are the chief enemies of an equitable market mechanism. But in the economic democratic system that is being advocated here, both these evils can be taken care of. As the representative of the Government, financial institutions, workers as well as entrepreneurs will sit on the board of directors and the various committees, it will not be possible for any vested interest to take decisions to restrict production, step up prices unfairly, enter into black money transactions, purchase inputs as more than market prices from friends, relatives and other colluding parties, sell the product to such colluding interests at more than warranted prices (thus accumulating black earnings), underinvoice or overinvoice exports and imports and indulge in other such malpractices. In particular, the key oligopolistic practices restricting production and charging unduly high prices will be ruled out. One major imperfection of the market will disappear.

Secondly, it will not be possible in such a fully representative and democratic organisation to pay unduly low and exploitative wages and salaries. On the other hand, workers' unions need not demand wages and salaries out of line with productivity, as that, while it will raise their wage momentarily, will cut the company's profitability and reduce their own profit in their capacity as shareholders. Income distribution and purchasing power will certainly be equitable and this will take care of the other imperfections of the market mechanism.

With these two major corrections for oligopoly and maldistribution of income, the just market forces will come into their own and then the markets can be better trusted to settle prices and costs at equitable and fair levels—with demands more corrctly representing genuine needs and supplies more responsive to demands, rather than being restrictive. With the tripartite arrangement in the marketing and productive fields, it should be easily possible to introduce any further corrections or improvements in the price-and-cost structure in order that essential commodities are within the means and purchasing power of the lower and the middle strata of workers and income-earners.

In India, although we talk of the objective of having a socialistic pattern through planning and although this was spelt out in the first 20-Point Programme in the form of allowing participation of workers in the management, in effect, throughout the entire process of production there has been hardly any effort to give real and effective participation to the workers in management. Some half-hearted efforts have been made in the nationalised banking sector in the form of nominated members from amongst employees on the board of management, but the concept that the workers should be treated as partners and should have equal and effective representation in the board of management at the highest level has not been accepted, even mentally, by the authorities concerned.

Whenever this topic has been discussed, one always finds a reservation at the back of the minds of those in authority. They somehow believe that the managerial class is essentially a superior variety consisting of people who are born and bred in higher culture, educated mostly in public schools and preferably have had their higher education abroad. It is felt that it is this class which must essentially be at the highest echelons of management in the public sector. In the private sector the same feeling prevails among the industrial class. Unfortunately, this seems to influence even the politicians in power. Everyone seems to feel that the working class is somehow inferior, both in quality and understanding, and, therefore, does not deserve to have a place in the board of management. It is felt that if the workers are given such a position, instead of being helpful, they would be a hindrance to decision-making, particularly when decisions have to be taken on buying equipment or setting up projects involving millions of rupees.

It is surprising that these very people usually agree to give a participatory role to the workers in sick units, which are not making profits, because they feel that by giving the workers a share in the management it will make them more responsible and even goad them to make sacrifices in their own interest to pull the industry up and bring it out of the red. But the moment a unit becomes profit-making and viable, the very people revert to the belief that the workers must not have any voice in the management, particularly at the highest level. Somehow, this hangover of the capitalist culture of economics, maintaining the basic distinction of employer and employed as separate classes, is accepted as a basic premise.

The author has been in the trade union movement for more than 30 years and has throughout believed that the workers can play a positive and responsible role in management, because they have the real and the highest stake in the success of the industry to which they belong. A well-known offset printing press in the private sector can be cited as an example. This unit was closed down for more than 15 months due to a quarrel between the partners. When it was taken over under the Industries (Development and Regulation) Act, 1951, the workers not only accepted a cut in their wages in the form of reduced dearness allowance, but also cooperated with the management in bringing up the unit to the trading profit level within a period of less than six months.

The author's next experience was with a major public sector undertaking, the Durgapur Fertiliser Plant. Again, this plant had been closed down in 1982 due to a labour-management dispute lasting over eight months, causing a monthly production loss worth millions of rupees. This unit had two major unions, one belonging to the Marxist school of thought and

another belonging to INTUC, which has the same ideology as that of the Congress party. Both unions were at loggerheads with each other, but both were against the management. Hence, the deadlock and the stalemate. This author held consultations with the management, with officers of his Ministry, with the leaders of both the unions and ultimately went to the plant personally and called a joint meeting of all the workers and made a proposition to both the unions to have two of their representatives on the managing committee of the plant and told them that this managing committee had full and final authority in all matters relating to the working at the plant. Both the management and the workers were told to take up this challenge and run the plant as a joint effort. Serious apprehensions were felt about the success of this experiment by many people, particularly at the top level of the management. However, it has been a matter of great gratification that the plant not only resumed functioning, but started showing record production in terms of capacity utilisation within a period of three months from the date of its commencement and to prove that this was not just a matter of initial exuberance, this trend has been sustained for nearly a year now. During this period, the plant which even at its best, prior to September 1982, had never reached a capacity utilisation of more than 40 per cent, had achieved capacity utilisation exceeding 90 per cent during some months and on an average of about 80 per cent till now. Moreover, during this period there have been no instances of disputes or clashes either *inter se* the workers or between the management and the workers. Thus, if ever proof was needed of what participatory role of workers can achieve, this is it. But if there is no will and if faults have to be found because somewhere the vested interests get affected, then there are numerous ways to hinder the much-needed change.

A major and catastrophic instance in recent times has been that of the textile industry of Bombay, which had been closed down for over two years rendering about 200,000 employees idle and causing a production loss running into billions of rupees during this period. The main reason for the showdown in the textile industry has been the insistence on the part of the management, unfortunately supported by the government, that only a particular union will be treated as the recognised union. This union is not willing to have its membership or its credibility and support among the employees judged on any democratic criteria, more particularly that of an election by secret ballot. It insists that it should be recognised by some sort of verification during which it expects to be favoured by the government because of its political allegiance.

It is this which has been the bane of the entire employer-employee relationship in this country. As long as this union had some credibility among the employees, the relationship between the employers and the employees did not come to a crisis. But when the so-called recognised union lost its credibility and was not willing to establish itself by any democratic method, the matter came to a serious break. As a result the whole industry was thrown in turmoil by a prolonged strike. It is therefore imperative to decide that in the present pattern of employer-employee relation, the only rational way of establishing a bargaining agent for the employees must be in the form of electing that bargaining agent periodically, say, every two years, by secret ballot among the employees of the concern. The Industrial Disputes Act will have to be suitably amended to achieve this objective. There cannot be any convenient alternative to circumvent or by-pass this fundamental need. However, in the model envisaged in this thesis on economic democracy, the entire working class force will be partners in the form of shareholders, each holding a nominal share and they would annually elect, from the respective categories of employees belonging to managerial, technical and non-technical classes, their representatives on the board of management as partners. Hence, there would be no cause or need for having trade unions under this structure and it will obviate the need for having a bargaining agent Had this philosophy been accepted and adopted in the textile industry or even if the bargaining agent had been decided by way of secret ballot, this author is confident that there would have been no textile strike.

Even now, when we are thinking of a solution, and a takeover of the closed mills has been ordered, I would sincerely suggest that the units should adopt the proposed model wherein the workers will be treated as shareholders and partners in the new units and will have an effective voice in their management, so that where necessary they will have to agree to make sacrifices in the form of rationalisation, reduction in the complement as well as improvement in productivity and modernisation of the plant. This can be achieved only creating a total feeling of belonging and participation among the working force. Unfortuantely what is called nationalisation often only means either bureaucratisation or statism, where the personnel of the management are nominated by the government and the exploitory philosophy of employer-employee relationship based on mutual distrust continues to prevail and plague the industry, as indeed has been witnessed in the entire nationalised textile sector and many other so-called nationalised units.

The suggested model gives full scope for the individual initiative of the entrepreneurs. It would provide them with attractive returns, both for their skill and their investment. The financing institution would also get a fair return. However, the net surplus generated would always belong to the State, which represents the people as a whole. Hence, there would be no likelihood of a few individuals amassing the surplus and controlling it themselves. Since the surplus in the organised sector would automatically belong to the State, there would be no question of taxing the organised sector. Thus, most of the sources of generation of unaccounted money would disappear at the root itself.

In the unorganised or self-employed sector, the distributive mechanism organised through the national marketing organisation would enable the State to know at all points of time the exact margin of profit and the income that a private producer or trader may have made in a particular economic activity. Therefore, by collecting indirect taxes the State can take a share from the surplus generated by the self-employed or unorganised sector. Once the members of this sector have been provided with adequate purchasing power to meet at least their basic requirements and as they reach a level where they can produce better goods and contribute in the form of better services, they can be encouraged to save a portion of their surplus or the same can be collected indirectly in other forms.

The producers and distributors through the national organisations would annually fix prices of all consumer goods bringing about a proper parity of prices between the raw material and the end-products. Care can be taken in this regard to deliberately remove the imbalance by increasing the prices of agricultural raw material and, at the same time, subsidise the prices of essential consumer products like foodgrains and edible oils by pegging goods of comfort and luxury at higher prices.

It is fundamentally wrong to think and treat the entire private sector as consisting of exploiters and anti-social elements and the public sector as having all God's good men. This attitude has an overall demoralising effect on the entire socio-economic fabric of society.

On the other hand, if the entire economic sector is treated as a national sector and an in-built mechanism of self-discipline introduced, this would not only instil a sense of national patriotism and self-confidence in the entire people but would also galvanise the national economic activity.

With widespread productive activity and with faster and larger resource generation, we would be able to undertake even gigantic projects like the linking of national rivers by employing millions of young persons on a semi-voluntary basis with a national patriotic zeal for a nation-building crusade.

Once large-scale employment opportunities are created in all regions of the country, this would enthuse young people in the national endeavour for economic swaraj and they would turn away from divisive and fissiparous tendencies which today threaten to endanger both unity and democracy.

Then there is the problem of regional imbalance that has to be tackled under any economic system. In the proposed system, there would be an automatic economic growth in the countryside, affecting beneficially the entire rural population. This, combined with positive efforts, can be made to encourage the setting up of industries in regions where there has been no industrial growth. This can be done by applying article 371 of the Constitution to all States in the country. The emphasis here need not be only on big industries but also, indeed more so, on labour-intensive, small-scale and cottage industries capable of providing larger employment. There are some products like miniature electronic goods, watches, electrical appliances, bicycles, machine tools, drugs, cosmetics and chemicals which have no internal locational constraints and can be located practically anywhere. They are also not dependent on heavy supplies of electricity or water. Positive incentives can be given for the location of such industries in 'no-industry' regions right down to the village level in the form of (1) duty and tax relief, (2) training to the local people in technology, (3) supply of raw material at preferential rates and (4) organising the marketing of the products. The Central Government or State Governments can provide incentives in the form of a moratorium for two or three years by not questioning the source of investment, provided it is made in setting up new industrial ventures in these 'no-industry' regions. A little unorthodox but more positive incentives would have to be deliberately devised if people have to be persuaded to set up industries in these regions. The State Governments and the Centre can provide infrastructure facilities, proper transport links with urban centres and entertainment and recreation facilities (e.g., TV and playgrounds) to attract the entrepreneurs. With a sufficiently powerful and positive drive, it should not be difficult to develop these regions. And once industries have been established, they would generate a cumulative effect of circular causation in opening these areas for further development.

A positive effort must also be made to divert industries from industrial metropolises where they are concentrated at present. Again, this can be done by giving incentives to industries to shift to underdeveloped and backward regions. The most important factor, of course, is marketing of the goods produced, and it should be effort, which is the whole object of this thesis, to develop the dispersed population as the real market by coverting the needs into economic demand through proper purchasing power.

Every person engaged in economic activity must be deemed to be engaged in national activity and cannot claim to be divorced from national interest. Hence, although individuals would have full freedom to engage in economic activity of their choice, they would have to work in harmony with other forces engaged in that economic activity as well as in harmony with the interest of the whole society. This harmony would be woven into the economic structure itself and would not be imposed from above.

Very often, in developing countries like India, a mis-conceived concept of socialism has crept in. At one time it was thought, for instance, that nationalisation of a particular industry and placing it in the hands of civil servants would eliminate its exploitative character and thus achieve a socialist objective. However, in practice, it has been experienced that the so-

called nationalised sector, known broadly as the public sector, has provided greater scope for economic inefficiency, heavy losses and a drain on public resources. The simplistic denunciation of the entire private sector as exploitative, anti-national and capitalist and eulogising the public sector managed by paid servants in the name of socialism and therefore sacrosanct, have proved to be a highly disastrous feature which has somehow cast a spell on the entire economic system.

The original concept that a mixed economy would lead to the growth of both the infrastructure industries in the public sector (requiring heavy investment) and the industries in the private sector dealing with end products has unfortunately been belied. This is because in the so-called public sector, there was a total lack of accountability and even elementary principles of economic management were not followed. The public sector was dominated by men brought up in a file-oriented bureaucratic culture as against the result-oriented industrial culture. As the public money which was invested in this sector was no one's money in particular, there was no anxiety about its loss.

While overall inefficiency has been the chief ailment afflicting the public sector, the private sector's record has been even more dismal and has done the country damage. The private sector's growth has been reflected in a few large business houses taking away the major share and many small and medium industries developing in the ancillary field, most of them catering to the need of the comparatively small, urban-oriented market, emulating the pattern of the consumerist society in the West. It is here that, due largely to the impractical concept of taxation and also because of the growing constraints imposed on the economic activities in the form of rules, regulations and orders which have proliferated, probably a thousand fold since Independence, the temptation to evade a taxable income grew. Unfortunately, this resulted in a various circle of tempting the government to put more constraints which lead to the creation of greater avenues of corruption.

The scheme of treating every economic sector as a national sector and binding it within the framework of economic democracy is therefore envisaged to pull the economy out of the stagnating and suffocating clutches of the present economic pattern. There cannot be any half-hearted measures, and very often we deceive ourselves when the same machinery suggests some committees or commissions which come up with some window-dressing proposals, but, in effect, nobody really wants to bring about a structural change. The vested interests in the present system are so powerful and so well entrenched that it is virtually impossible for even well-meaning popular bodies to bring about any real change.

Theoretically, the scheme of economic democracy should be welcomed by all those who believe in free enterprise as under this system there would be hardly any constraints placed by the government and the economic activity would be practically free from the quagmire of rules and regulations. The policies and programmes would be evolved mainly by people engaged in, and knowledgeable about, their respective needs in industrial or commercial activity. The economic activity would be free from regular bureaucratic constraints or interference. The structural change brought about by this pattern would ensure the balanced growth of the whole country by providing productive employment to the entire work-worthy population and by creating adequate purchasing power as well as marketing facilities. Everyone engaged in productive or distributive activity would be assured of a fair return by proper pricing policies annually formulated by the representatives of the producers, distributors and the consumers as represented by the government.

To formulate policy guidelines would be the main job of the government as the representative of the people. But the actual implementation would be left to those who know the job and who have the necessary expertise.

This concept of economic democracy in which the entire economic activity would be under one national sector, therefore, envisages a peaceful economic revolution wherein the unemployed manpower of the country would be harnessed for productive purposes using the rich available natural resources of the country. The whole concept of the growth rate calculated by the financial and budgetary monetarists would undergo a substantial change and the growth rate of the entire national product can be greatly increased, which, in turn, would generate much greater surplus and capital, ensuring further speedier growth of the entire country. It is unfortunate that while we have planned for a 5 per cent growth rate, in effect, the growth rate has been only 2.5 to 3 per cent. Routine fiscal and monetary methods have been tried, and although they may serve at times as palliatives, the basic problem of the growing imbalance and gap between the rich and the poor cannot be plugged by these classical methods.

The one drastic solution could have been a total Communist revolution, but a society steeped in tradition and religion cannot easily go in for this revolution, and although such a revolution may solve some economic problems, yet, it would also mean the loss of individual freedom.

The situation has been summed up by Raul Prebisch in his learned work, "Towards a Theory of Change", in the following words :

> ....there is every justification for this anxiety to explore new paths in peripheral development.

We have made a decided break with neo-classical teachings; nor do we find the key to our process of change in Marxist theory. For the former, the problem of accumulation resolves itself of its own accord through the unrestricted play of market forces. And for Marx, accumulation was a spontaneous and systematic result of capitalist development. The periphery had no place on his intellectual horizon.

Youth in Rural development

G. Narayana Reddy

Rural youth lack opportunities for organisational activities and guidance for participation in developmental tasks, says the author. He feels, at the moment what is needed is the formation of a National Youth Policy. Due recognition should be given to youth activities at the national planning level as an effective instrument in translating the policy provisions into concrete developmental tasks.

THE UNITED NATIONS have designated the year 1985 as the The International Youth Year (I.Y.Y.). Its theme is "Participation, Development and Peace". In response to the U.N. call, the Government of India is already in the process of constituting a National Coordination Committee which will consist of representatives of State Governments, Central Ministries and Voluntary Organizations. In this context, it was felt desirable to review the extent of youth involvement in rural development. This will facilitate wider discussion on some of the crucial issues of planning and programming for effective involvement of rural youth in the development process.

Rural Youth constitute a numerically dominant, potentially resourceful and adventurous segment of the population. Unlike urban youth who are mostly educated, organized in many forms and have access to facilities and institutions meant for youth services, rural youth are mostly illiterate and are controlled by the heads of their families. They lack opportunities for organizational activities and also lack guidance for participation in developmental activities. Youth from larger villages (not to speak of smaller ones) have more scope to organize youth clubs; but in the process, these clubs turn out to be either socio-cultural organizations or political party units. Various reports indicate that the youth clubs, which were conceived on the pattern of 4 H clubs of western countries, have either failed to duplicate the values and activities of their western counter-parts or they were proved incapable of designing the indigenous type of clubs in India (Allibanda, 1980). Though rural youth have various fields of activities, they have not been involved and mobilized to contribute their might to the development process. This was due to various reasons such as lack of nation-wide youth programme, lack of appropriate network for youth organizations, lack of training and guidance, lack of inter-departmental or sectoral coordination and lack of adequate youth organizations and programmes in rural sector. There are two possibilities for a total mobilization of rural youth for development: (1) to formulate a National Policy for Youth and build up a nationwide network of youth organisations and training centres; (2) to involve Voluntary Organizations in a large scale to organize rural youth, and they be funded totally from the Union and State budget allocations for youth activities. This article deals with the above issues and suggests a radical approach to involve rural youth in various developmental activities.

Socio-economic Features of Youth

In India, the youth population in the age-group of 15—35 is about one-third of the total population. Of this age-group, nearly 20 per cent are urban youth, while the remaining 80 per cent are rural youth. If we take the income distribution of the families, the youth represent the same highly skewed distribution pattern of opportunities as of general population, for education, health, housing, employment and other

services (Mathur, 1981). The widespread illiteracy, specially in rural areas, unemployment among educated youth, crisis of ideology, lack of proper guidance, lack of access to organizations and services meant for youth, "brain drain" of educated rural youth to urban areas, wastage of time in delinquent activities, are some of the major problems faced by the rural youth. Added to this are the early age of marriage and dowry system, especially affecting young girls in rural areas.

A study on activities of rural youth conducted by Salvi and Rade (1967) reported thus : (1) One out of four youth was an illiterate ; (2) most of the rural youth were engaged in farming ; (3) reading and radio-listening were the main leisure-time activities of majority of youth ; and (4) educated-unemployed rural youth had more leisure-time than illiterate farm workers. Similarly some rural studies have reported the early age of marriage as a serious problem for girls, leading young girls into adult responsibilities without preparation. Chitta Ranjan (1974) has reported, that : (1) the youth of the present time are losing moral calibre and personal integrity ; (2) they are interested in acquisition of power and wealth ; (3) they are easily prone to violence and rowdyism ; and (4) they are misused by the vested interests, especially the political party leaders. These are in general some of the problems faced by rural youth today.

Youth in the National Movement

Looking at the historical antecedents, we find very interesting facts about the involvement of youth in the national affairs. In the pre-independence era, youth played a very dynamic role in the national struggle for freedom. Realising the potential resources among youth, Gandhiji had trained and mobilized educated youth to move into villages and spend at least two to three hours in literacy campaign which was prescribed as a duty for them. The youth also undertook social services, campaigned against untouchability, freely mixed with the down-trodden and even cleaned their settlements to teach them the importance of clean surrounding for maintaining better health. However, most of these youth whom Gandhiji had involved in rural services were urban educated and rural youth involvement was negligible. Similarly, Nehru encouraged youth activities to a large extent. This was followed by the emergence of Sanjay Gandhi as a national youth leader in India. However, the youth work took political colour in the years after Gandhiji's demise. To a large extent at present youth are leaderless, divided and are without any ideology for themselves.

Urban-biased youth programmes

Although the urban youth constitute only 20 per cent of the total youth population in India, the various youth programmes developed and supported by the Central and State Governments in India are biased in favour of the urban youth. The various voluntary youth organizations that have come up in the last few decades cater mostly to the needs of the urban youth. For example, the Y.M.C.A., Y.W.C.A., various units of University Students associations, youth hostels associations, boys and girls scouts, etc., all cater to the urban-educated youth. Even the schemes such as N.C.C., N.S.S. and Sports Councils have educated urban youth in large numbers as their beneficiaries. On the other hand, in rural areas, the only organizations that exist are youth clubs or the young farmers' clubs which are scattered and lack communication channels and proper guidance in their activities. The Department of Youth Services, in charge of youth activities in rural areas, seems to have made no impact whatsoever, though it has a sizable amount at its disposal. Even some of the officials confess that they don't have proper programmes for rural youth except funding youth clubs for furniture and buildings. They have not come up with any sort of projects that can be run on a sustained basis by the youth clubs. Taking the advantage, many political parties are making use of the youth power in villages to further their own interests. The most neglected lot are the rural young girls who have only the vision of getting married at an earlier age.

Realizing these weaknesses in youth programmes, the Government of India has formulated a massive programme for Rural Youth called as TRYSEM (Training Rural Youth for Self Employment), which is intended to mitigate the rigours of unemployment among the rural youth. It is intended to train atleast 2,00,000 youth in a year covering 2,600 blocks. In an average about 40 to 50 youth were expected to be covered in every block under TRYSEM. After training they are given credit through nationalised banks and are supported periodically through guidance and advice for their units of production. The following table gives an idea of the physical progress made in TRYSEM between 1979 and 1982 :

TRYSEM : PHYSICAL PROGRESS (1979—82)

Sl. No.	Year	No. of persons		
		Trained	Self Employed	Self employed as % to total trained
1.	1979-80	40.2	13.7	34.1
2.	1980-81	122.6	45.6	37.1
3.	1981-82	179.0	82.6	46.1

Source : Rural Development Statistics, N.I.R.D., Hyderabad 1983, p. 7.

The major training centres for youth include Gram Sevak/Sevika Training Centres, Farmers' Training Centre, Krishi Vigyan Kendras, Agricultural and

other Universities, Industrial Training Institutes, State Institutes of Rural Development and the selected Voluntary Organizations. However, this programme is yet to make an impact in rural areas. It is reported that faulty identification of beneficiaries, lack of equipment and technical support in the Training Centres, elaborate credit granting system in Banks and corruption, are some of the major reasons for the retarded progress of the scheme in rural areas.

Need for massiv e mobilization

In the light of the abundant potential resources that youth possess, the absence of necessary organizations and channels to tap these resources prompt us to think of a better means of utilizing the available manpower resources. At the moment what is needed is a nationwide youth programme and not a patch work here and there. The first and foremost thing that the planners and decision-makers have to do is to formulate the National Youth Policy and set up a National Youth Council. The absence of these has been the ground for many a convincing and convenient excuses for all the weaknesses, loopholes, manipulations, inadequacies and half-hearted attempts that have been spearheading the youth programmes in our country. The National Policy on Youth should emphasize for a due recognition of youth activities at the national planning level to combat the accumulated deficiencies and should be an effective instrument in the process of translating the policy provisions into concrete developmental tasks.

The present top-down approach does not seem to deliver the goods. Hence there is an acute need to change the approach and strategies for mobilizing rural youth. Some experiments made by Voluntary Organizations as well as youth groups reveal that the youth at the gross-roots level should first be mobilized and then broaden the movement to cover the whole youth population. There are various reasons that may be envisaged for organizing the local youth groups first: (1) programmes at village level are less costly, involves less administrative expenditure and needs less complex organization; (2) local programmes facilitate many youth to participate; (3) an inventory of local talents and use of local resources provides self-confidence for youth; (4) the local bodies can become training centres for the future leadership to support the development programmes; (5) these activities not only help youth to utilise their leisure time in a better way, but also can become tools of social change (Chakraborthy, 1978; Allibanda, 1980).

To support and advice the local level youth organizations, there should be Youth Training Centres in every block with necessary equipment and personnel, apart from the already existing training centres. A cadre of Youth Service Officers may be trained and deployed at each block to further facilitate the training and organization of the rural youth. They can also work as liaison officer to coordinate the youth programmes of various development departments. Some of the Voluntary Organizations which have tried this approach have reported tremendous success in organizing youth and motivating them to participate in various developmental aspects. This indicates that there should be a massive involvement of the existing Voluntary Organizations as well as encourage new Voluntary groups to supplement the Government programmes for youth.

The review Group set up by the Government of India in order to prepare for the International Youth Year, should examine these aspects and advise the Government on making the programmes more meaningful. The National Coordination Committee and the Advisory Committee on International Youth Year must examine and plan the programmes keeping in view the needs, priorities and aspirations of different categories of youth.

Role of youth today

Rural Youth at present are no more stagnant and isolated as they use to be in the past. Now they are emerging as a big force in every walk of life. Starting from universities to the national political affairs, youth are becoming a dominant and powerful lobby. Various factors work towards facilitating the emergence of rural youth in the modern context. These may be envisaged as (1) Penetration of political parties and greater politicization of rural youth; (2) increase in the use of mass media and the development communication infrastructure in rural areas; (3) increase of educational institutions and educated youth in rural areas; (4) influences of urbanization and industrialisation; and (5) increasing attention paid to youth groups as a result of their physical strength in sports and cultural activities (Chakraborthy, 1978; Sinha, 1967).

Viewing this situation in the light of the "Social Mobilization Through Institutionalization Model", put forward by Deutsch, Huntington and others (cited in Reddy, 1983), one can visualise the crisis that the rural youth are undergoing at present. Rapid modernization and social mobilization tend to produce social, economic and psychological dislocations, distortions, rising expectations and a sense of deprivation. To tackle these problems, creation of new institutions is a must and "if a government fails to meet the increasing burdens put upon it by the process of social mobilization, a growing population is likely to become alienated and disaffected from the State" (cited in Sigelman, 1979 : 208). In a situation which is characterised by weak institutionalisation, the complex interaction between social frustration and lack of mobility opportunities result in violent and disorderly participation; while in case of strong institutionalisation, the outcome will be orderly participation of youth in developmental activities (Reddy, 1983). Hence it is necessary that we

create social institutions which can serve as instruments to provide emotional continuity and stability, entertainment, economic fulfilment and offer a kind of conviction to youth to take steps to ensure their present standard of living and to possibly increase their prosperity (Allibanda, 1980).

Without some significant and regular youth programmes at the village level, it is difficult to expect an orderly participation of youth in the development process. Many scholars have pointed out the various roles that the rural youth can undertake through Youth Clubs in villages. These can be classified into six categories as follows : (1) Agriculture and allied activities, (2) Education, (3) Socio-cultural, (4) TRYSEM, (5) Leadership development, and (6) Social action and Crisis management. Various roles that youth can assume under each of these categories are discussed below :

Agriculture and allied activities

The rural youth, male and female, because of their family and community background in farming, are active partners in various agricultural activities. Since youth are recognised as effective "agents of change", they can help in the process of dissemination and adoption of modern techniques and methods of agriculture and can take active part in the removal of resistance to innovations among rural people. Youth clubs and their members can take active roles in agriculture and related activities such as adopting innovations by themselves either in a community farm site or in their individual farms, holding demonstration camps, training farmers in crop protection, giving a helping hand for extension officials, taking part in soil conservation, and tree plantation or social forestry and developing rural industries such as bee-keeping, sericulture, poultry, animal husbandry, pisciculture, etc. As a community project, the club members can grow cash crops in its community based plot, either contributed by the members or acquired through the Block Development Office, and make money for other socio-cultural activities. Some youth clubs in Karnataka have successfully adopted this scheme. They are also involved in maintaining service equipment such as sprayer to be hired for needy farmers. These activities not only serve the farming community but also can improve clubs' fund for community activities.

Educational activities

Youth clubs could be a means of harnessing literacy and skills of the young people. Since one among four rural youth is found as an illiterate, it is time to concentrate on improving literacy rate among the youth. The educated unemployed youth, who are found wasting their time in villages, may be drawn into the adult literacy scheme. The youth education and training is very important in rural Human resource development Such an improvement may be made in many fields, such as basic education, vocational training, improved nutrition and health care, new employment opportunities, social and recreational activities, forums on village and area level problems, leadership and character development, etc. Youth clubs can also invite important extension officials and have regular discussions with them apart from involving them in educating the rural masses. The club can also run a mini rural library as a means of maintaining their own intellectual stimulation. Keeping up with current events, it can also subscribe for a newspaper. These are in practice in some of the youth clubs.

Socio-cultural activities:

Youth clubs in most villages are involved in socio-cultural activities in a better way than in other activities. The youth club centres are becoming places for rest and relaxing. They are the congregation centres for many youth in villages. Apart from taking interest to celebrate religious processions and festivals, they can also take greater interest in sports meets, social work and community action for removal of social problems in villages.

TRYSEM activities:

Along with proper identification of beneficiaries, youth clubs can sponsor youth for acquiring skills required for setting up self-employment units in villages. They may, as a community project, also take up income-generating schemes which can be financed by the Banks. They can help in the inventory of local needs and can act as a link between the patrons and the beneficiaries, thus helping the scheme and the youth to progress.

Leadership development

Perhaps creation or development of responsible young men and women, who are ready to accept the challenge and responsibility of leadership, may be the most pertinent task today. In view of the deteriorating situation of leadership values and shortage of charismatic leaders in many local institutions, it is very imperative to develop a cadre of youth leaders who can replace the selfish, power greedy old junk in village organizations. The new breed of leaders should be trained in group work and public relations and they should be kept away from factionalism and self-seeking interests To realise these ideals, the clubs can be the starting points and selected youth may be given extensive training in community work, leadership training camps, learning-by-doing projects and through discussions and exposure to new areas of youth activities. In order to promote leadership training among youth, it is necessary to have effective organization and support structures for youth clubs as suggested above.

Crisis management and social action

Rural youth involvement at present may be recognized by a passivity in which effort is either

totally absent or is unable to produce a course of action. Not in a position to move with the social tide, there is a collective drift among youth at present. Hence, there is a need to direct youth for a purposeful striving with specific goals for accomplishment. It is necessary to create awareness of the relative distance between the present state and the ideal among youth. They must be mobilized and purposefully directed along a conscious path toward a specified end ; only such concentration can inspire the fullness of performance and intensified action.

Youth when mobilized collectively can be an effective force for disaster management. In calamities like floods, droughts, cyclones, fire and road accidents, damage of water tank and bunds, etc., youth can take active role. They, as a social force, can actively work for eradication of social evils such as alcoholism, dowry system, etc. In fact, as a collective force, youth can put a check on arbitrary and anti-social actions of vested interests in Panchayats as well as government machinery. Many youth clubs are reported to have undertaken this kind of work and succeeded in checking the prejudices and corruption among the official machinery.

In conclusion, it may be said that the momentum of youth participation is gaining importance with the declaration of International Youth Year—1985. But the effective participation of rural youth may not be possible unless the following factors are considered seriously while planning future programmes :

- Formulation of National Youth Policy and a National Youth Coordination Committee ;
- Creation of nation-wide rural youth programmes ;
- Mobilization of local youth groups with greater emphasis on utilization of local resources ;
- Creation of a cadre of youth officers and professional staff to train youth and to work in rural areas ;
- Establishment of a net-work of youth training centres all over the country and bring about effective coordination among various departments and institutions concerned with youth work ; and
- Involvement of voluntary organisations in a massive way in the youth programmes.

(*Contd. from page* 9)

that is, earnings, the intricacies of the phenomenon cannot be accommodated in a plausible investigative procedure. Entrepreneurial incomes, income of the self-employed, earnings of the salaried employees and workers', wages are not only different from one another by their very nature but are also generally accompanied by a varieties of monetary and non-monetary perquisites and fringe benefits, other compensations and psychic returns. A suitable measure of all these are required to be taken into account for any meaningful analysis. All this is easier said than done.

No proper official data of personal income

A major reason for there being no study dealing with the causes of income inequality appears to be that hardly any official statistics about personal income distribution are complied in India. The decennial census are quite indifferent in this respect. The National Sample Survey do not usually collect this information. They, in their 17th round and 32nd round in the block entitled "Employment and Unemployment", have attempted to do so. However, the earnings vary from region to region largely because of the labour market customs and practices of paying unequally in the form of pay and allowances for exactly this same job performance. Moreover, their sample of households for one single region is so small and heterogenous that hardly any meaningful analysis pertaining to a casual study covering the main sources of income inequality is possible. Through some useful studies are available regarding the pattern of income distribution in the country as a whole little attention has so far been paid to such a topical issue of primary human interest as causes of the distribution of unequal rewards in spaces where they happen to be acutely unequal, that is, the urban areas.

The nature and the magnitude of the problem is thus, apparent; the need is to understand the various forces strengthening the economic drift. Formulation of a suitable income policy with some sort of social security measures, cannot be postponed indefinitely. A detailed analysis of the structure of entrepreneurial income, professional and occupational earnings, incomes of the self-employed and rewards for those operating in the lower middle class and urban informal sector, in whatever capacity, merits a detailed investigaton for allowing the system to generate and maintain such magnitudes of economic inequality as are conducive to reasonably rapid pace of economic development under democratic planning and for affecting social justice.

(*Continued from page* 24)

But by raising the bogey of Communism, are we going to allow the continuance of an economic pattern which would perpetuate the stranglehold of a capitalist system or a structure where a few alone continue to perpetually exploit the many ?

Next issue : The alternative (continued)

Why non-formal education!

G. Ravindran Nair

If the formal education system as now prevailing cannot meet the needs of all the segments of population, then some other method has to be devised so that the left-outs are not denied education which is so essential for human development. Non-formal education is one such system that can meet the requirement. This is non-traditional, non-hierarchical and non-elite-preserving method says the author.

IF LEARNING WERE DEEMED to take place purely within the milieu of schools, it might well follow that well over half of the world's present population knew nothing at all. No doubt children receiving formal education will constitute an increasing majority of the under 17-population, but the absolute numbers of out-of-school children and youth will continue to expand as in the past. The basic question remains: will the formal education dispensed according to determined curricula over a given period within a structured educatonal establishment like school, college or university meet the needs of all the segments of population ?

The Union Ministry of Education has launched a countrywide system of non-formal education to combat the high rate of drop out in elementary and middle schools. About 63.1 per cent of children in the primary stage and 77 per cent at the middle stage have dropped out of schools in recent years.

What does it offer ?

In the non-formal system of education, both the non-starters and dropouts are offered the same primary and middle level courses on a condensed and graded form with two to three hours' daily instruction at places and timings suitable to their conveniences. This non-formal education offers enough flexibility in the curriculam; the stress would be on developing competence rather than on theoretical and academic propositions. The curriculam is based on national needs such as population education, national integration and inculcation of moral values.

Major Thrust

The major thrust of non-formal education has been given in the nine educationally backward States of Andhra Pradesh, Assam, Bihar, Jammu & Kashmir, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal which account for eighty per cent of non-enrolled children in the country. The Union Ministry of Education has been extending Central assistance to these States on a 50 : 50 basis under a Centrally-sponsored scheme for non-formal education programmes. Grants have also been made available to other States and Union Territories to innovate experiments and projects in non-formal education.

In the broader perspective, what should be the scope of non-formal education ? In view of the high rate of illiteracy, the agrarian state of the economy and persistent rural unemployment and under-employment, coupled with the non-involvement of the people in the socio-economic development activities, it is quite possible to enlarge the dimensions of non-formal education. In fact, non-formal education, like family planning, could assume the form a people's movement that would change the entire lifestyle of the mass of people still groping in the darkness of ignorance. Apart from providing second change of learning to those who have missed formal schooling, non-formal education should enable the rural poor, within the programmes of integrated development, to acquire useful knowledge, attitudes and skills. It can take the form of functional literacy, vocational training, recurrent education, lifelong education and instruction via the media.

Target groups

Taking into consideration the experience of other developing countries, the target groups of non-formal education could be enlarged to include (a) children in school who require consolidation of their education; (b) women; (c) children and male adults

who have never been to school besides dropouts.

Non-formal education would be treated as a boon by the large mass of illiterate people if it tends to sharpen the skills of the lay people, making them economically self-reliant and helping them contribute to welfare of the society as well.

An overall education system helps learners to move within it, both horizontally and vertically, and widens the range of choice available to them. This underscores the need for non-formal education which must be integrated as part of the overall education process, providing learning opportunities where formal education is not yet available, and complementing education and enriching it at all levels where it is provided. Non-formal education should provide basic functional education and should remove the educational deficiencies of drop-outs from formal education and place them in the mainstream of further education.

Finally, it is nectssary to ensure that every individual is motivated to keep learning throughout his or her life if he or she is to continue to contribute to the progress and development of a changing society.

Complementary or alternative

Should non-formal education be complementary to formal education or should it be an alternative ? An answer to this question lies in a deeper analysis of the merits of both the systems. First, the basic matter of formal education—literacy and numeracy—can be equally well dispensed under a non-formal system which, in addition, is geared more fully to the needs of society and of the individual trying to find his place therein, Thus by adding non-formal education to the existing formal structure, the latter's efficacy (particulary costwise) and goals are in no way question even though they have often been described as, respectively, low and inappropriate (elite-oriented).

As a complementary system, non-formal education is a poor man's education in the sense it prepares participants mainly for low-status manual jobs and that those participants come away from the least privileged sector of the population.. It does nothing to remedy the relative privilege acquired by those who manage to remain in the formal system.

Therefore, non-formal education could indeed profitably be seem and operated as an alternative system, both in the sense that it constitute a different way, at least potentially, of passing on the same educational matter and in that it is non-traditional, non-hieraschical and non-elite-preserving method.

In many ways non formal education would pave the way for the realisation of the basic objective of educational development. Although considerable progress has been achieved in the realm of education, educational growth has failed to achieve a more equitable distribution of income and social services, and an equilibrium between the productive capacity of the education system and the absorbing capacity of the labour market.

Why education ?

People need education to acquire a broad base of knowledge, attidudes, values and skills on which they can build in later life, even if they do not receive further formal education or instruction. Such education provides the people with the potential to learn, respond to new opportunities, to adjust to social and cultural changes, and to participate in political, cultural and social activities. As societies develop, education becomes a necessary condition for the ability of the individual to identify with the prevailing culture.

A developing country like Guatemala is utilising non-formal education for the promotion of primary health care. Rural health technicians, graduates of the technical high schools are training volunteer village health workers.

To perform their jobs these volunteers need educational techniques and materials that they can use in their communities. With the help of technical authorities they have developed village-level health educational materials like visual aids, games and skits that present issues and knowledge about health. To encourage villagers to improve their diets, they have drawn up a series of charts that give nutrition information using pictures of locally available foods and food preparation methods.

Educating girls through the non-formal education process may be one of the best investments a country can make in future economic growth and welfare—even if the girls never enter the labour market. Most girls become mothers and their influence on their children is crucial. Studies show that children are less likely to die, the more educated their mothers are. Families are better fed in terms of nutrition where mother is educated. Education delays marriage for women, partly by increasing their chances of employment; and educated women know about family planning. ☐

Power industry well equipped

THE POWER SUPPLY INDUSTRY in the country has achieved the capability to have annual addition in installed capacity to the tune of 3,000 MW will be required during the Seventh Plan.

While the capacity addition in the Sixth Plan period was 3,000 MW a year it was 2,000 MW in the Fifth Plan period. An addition of over 4,000 MW was achieved in 1983-84.

Annual survey of industries, 1981-82

ESTIMATES PREPARED BY the Central Statistical Organisation (CSO) based on the data collected in the Annual Survey of Industries (ASI), 1981-82 show that the performance of the industrial sector judged in terms of capital invested, value of output and value added by manufacture had been laudable during the year 1981-82. There was a 20.6 per cent rise in the value of output and 22.0 per cent advance in the value added by manufacture as compared to 1980-81. Consistent with the overall improvement in value of output and value added the manufacturing industries registered better investment, higher by 16.1 per cent in fixed assets in 1981-82. However, in that year employment rose only fractionally by 0.8 per cent as compared to the previous year.

The Annual Survey of Industries (ASI) is the principal source of industrial statistics in India. It is to provide adequate statistics on manufacturing activities in the country and to establish a sound reporting system to maintain these data on a current basis. The ASI is conducted under the authority of Collection of Statistics Act, 1953 which empowers the government to collect statistics and other information from industrial units. It covers all units coming under the Factories Act, 1948, i.e., factories employing 10 or more workers and operating with power and 20 or more workers without power

Main results

The ASI 1981-82 revealed that in that year there were 105 thousand registered factories falling under the purview of the ASI which utilised a fixed capital of Rs. 34702 crore, produced Rs. 73672 crore worth of goods and services valued at ex-factory prices and contributed by way of value added by manufacture Rs. 14554 crore to the national income of the country. These factories employed 7.78 million persons and paid Rs. 6777 crore as emoluments to the employees. Judged from these important characteristics there was an overall improvement in the industrial activities during 1981-82 compared with that in 1980-81 in which year the total number of registered factories was around 97 thousand, fixed capital invested was Rs. 29900 crores, output Rs. 61084 crores and value added Rs. 11929 crores. Higher growth in value based characteristics like fixed capital, output and value added was partly because of inflationary trends in the economy.

Structural position

Compared to previous year every value based characteristic of an average factory showed an improvement in 1981-82. Thus, a factory on an average had a fixed capital of Rs. 33.03 lakhs and employed 74 persons. The output and value added per factory were Rs. 70.13 and Rs. 13.85 lakhs respectively. Also the per capita output increased to Rs. 94730, emoluments to Rs. 8715, fixed capital Rs. 44620 and his contribution to national income as measured by value added to Rs. 18715.

Another important fact that is evident from the results of the ASI 1981-82 was that the fixed capital required to produce one unit of output has declined from 0.49 in 1980-81 to 0.47 in 1981-82. Further, comparatively less capital was required to generate each unit of value added, 2.51 in 1980-81 to 2.38 in 1981-82. The ratio of value added to output remained more or less constant at 0.20. The share of emoluments in the value added declined from 0.51 in 1980-81 to 0.47 in 1981-82.

Distribution of factories by employment

From the criterion of employment, as many as 80 per cent of the 105 thousand factories employed less than 50 persons each; these units accounted for 15 per cent of the total employment, 13 per cent of output and 8 per cent of value added in all the factories. Another important fact that is evident from the results of the survey was that more than half of the total employment and output and more than two-thirds of the value added were in factories each em-

(*Contd. on page* 34)

National income up in 1983-84

AN INCREASE IN THE REAL national income and per capita income of 7.6 per cent and 5.2 per cent respectively and a steep fall of over 20 per cent in the savings of the public sector are among the major features of the quick estimates of national income and consumption for the year 1983-84.

Other highlights include a 5.9 per cent increase in the real per capita consumption, implying a higher rate of growth of consumption than income. The rate of net savings and net capital formation changed very little as compared to the previous year. The estimates were released by the Central Statistical Organisation.

National income at current prices showed an increase of 20.5 per cent—from Rs. 1,32,470 crore in 1982-83 to Rs. 1,59,598 crore. At constant prices (with base 1970-71), national income was Rs. 50,276 crore against Rs. 50,437 crore in 1982-83. This implies an implicit rate of inflation of 12 per cent during the year, much higher than the rate of inflation of about 8 per cent in the previous year.

Rise in per capita income

The per capita income in real terms has been estimated at Rs. 749 for 1983-84 against Rs. 711 in 1982-83, showing a rise of 5.2 per cent over the period. The rise is slightly smaller which compared to the per capital income during 1981-82, the rise between 1981-82 and 1983-84 being about 4.9 per cent. Per capita income at current prices moved up from Rs. 1868 in 1982-83 to Rs. 2,201 during 1983-84.

As compared to the rise of 5.2 per cent in the per capita income, per capita expenditure showed a larger increase in real terms of 5.9 per cent. This is against an increase of 0.4 per cent between 1981-82 and 1982-83. The total consumption expenditure at current prices worked out to Rs. 1,33,694 crore in 1983-84 accounting for 68.3 per cent of the gross domestic product at market prices. National per capital final consumption expenditure during the year was Rs. 1,844 against Rs. 1,557 in the previous year. Per capita real expenditure rose by Rs. 44 from Rs. 600 to Rs. 644 during the same period.

The drop in per capita expenditure on food by 1.3 per cent between 1981-82 and 1982-83 was reversed in 1983-84 when food consumption increased by 8.9 per cent. Against the sharp decline in the consumption of cereal and cereal substitutes in the previous year of about 5.4 per cent, in the last financial year, there was an increase of 16 per cent. The other item which showed a substantial rise in per capita expenditure is edible oil, of 10 per cent compared to a decline of 6.6 per cent in the previous year.

Domestic savings up

Net domestic saving showed an increase from Rs. 26,080 crore in 1982-83 to Rs. 31,031 crore last year. However, there was a marginal decline in the ratio of net domestic saving from 17.1 per cent of the net domestic product to 17 per cent during the period.

The major contributor to this increase in savings was the household sector whose savings rose from Rs. 19,848 crore to Rs. 25,876 crore between 1982-83 and 1983-84. Financial savings of this sector increased by 24.5 per cent while household physical assets rose by 38.4 per cent. However, the increase in the savings of this sector was offset considerably by a fall in the savings of the corporate sector by Rs. 48 crore, implying a decline of roughly four per cent and a much steeper decline of over 20 per cent (Rs.1,029 crore) in the public sector. The sharp decline in public sector savings has been attributed to a fall in the savings of the administrative departments of the government.

Capital formation above savings

The rate of net capital formation continues to be much above the rate of saving. In 1983-84, it amounted to 18.4 per cent, slightly lower than that during the previous year when it was 18.8 per cent. The higher rate of capital formation over the savings

rate has been attributed to inflow of capital from abroad, though the level of inflow did not increase between the two years. In real terms, the rate of investment fell marginally to 14.8 per cent from 15 per cent in 1982-83.

Of the gross domestic capital formation, fixed capital formation showed an increase of 17.3 per cent. All the three institutional sectors contributed to the rise—the increase in the public sector was 12.5 per cent, in the private sector 17.3 per cent. The household sector registered the largest rise of nearly 25 per cent in fixed assets.

The rise in stocks during the year was much higher than the increase in fixed capital formation for the private sector though the increase in the public sector was lower by Rs. 1,383 crore as compared to the increase of Rs. 1,660 crore in the previous year. The private sector's holdings of stock rose by nearly 25 per cent during the period, from Rs .4,101 crore to Rs. 5,327 crore.

The real investment in agriculture, though it showed an increase from the level in 1982-83, still remained lower than the investment in 1981-82. It declined by 11.3 per cent as compared to the investment in 1980-81.

The fall in the real investment in registered manufacturing which was evident during 1981-82 and 1982-83 showed a slight improvement with investment of Rs. 2,599 crore in 1983-84. Against this, the investment was Rs. 2,493 crore in 1982-83, Rs. 2,590 crore in 1981-82 and Rs. 2,593 crore in 1980-81. There has been a significant increase in investment in two sectors between 1980-81 and 1983-84—communication from Rs. 146 crore to Rs. 197 crore and the category of others from Rs. 6,010 crore to Rs. 6,912 crore. □

(*Continued from page* 32)

ploying 500 or more persons, which accounted for only 2 per cent of the total factories.

Distribution of factories by capital

Small scale factories, i.e., factories with an investment in plant and machinery not exceeding Rs. 20 lakh, accounted for nearly 93 per cent of the total factories, their share in the total employment being 39 per cent. They accounted for as much as 24 per cent of the total value of output and 17 per cent of the total value added by manufacture.

Distribution of factories by organisation

Corporate sector factories had the dominant share in all the key characteristics. They accounted for 60 per cent of the total employment, 73 per cent of the total output and 76 per cent of the total value added, their share in the total number of factories was only one fifth.

Distribution of factories by ownership

Private sector factories, though very large, over 80 per cent of the total number of factories, shared among themselves 66 per cent of the total employees, 64 per cent of the total output and 59 per cent of the total value added.

Relative importance of industries

The contribution to national income was the highest from electricity, gas and water supply undertakings at 15.5 per cent, followed by basic metal and alloys industries 12.1 per cent, chemical and chemical products 11.9 per cent, cotton textiles 8.3 per cent, transport equipment 7.6 per cent, non-electrical machinery 7.2 per cent, food products 6.4 per cent and electrical machinery 6.2 per cent. All other industry groups contributed less than 5 per cent. These eight industries together accounted for about three-fourths of the total value added in all industries.

Food products led the industries in providing employment with 16.7 per cent, followed by cotton textiles (13.1 per cent), electricity, gas and water (9.4 per cent), basic metals (7 6 per cent), transport equipment (6.4 per cent), chemicals and chemical products (6.2 per cent), beverages, tobacco and tobacco products (5.5 per cent) and non-electrical machinery (5.3 per cent). These eight industries together garnered about 70 per cent of the total employment in all industries covered by the ASI.

Improvement in jute goods exports

Current trends indicate that exports of jute goods are likely to cross the Rs. 300 crore mark by the end of 1984-85 as against an export figure of Rs. 163.71 crore (provisional) achieved during the last financial year.

This performance in reversing successfully the downward trend of exports in jute goods has been made possible due to a dual strategy adopted by the Government. On the one hand, intensive export promotion measures were undertaken and on the other the internal market demand was stimulated.

The Government has set up a permanent steering Committee on jute and jute industry under the chairmanship of the Secretary, Textiles, for evolving inter-departmental coordination on jute matters and tackling other maladies affecting the industry.

There are 69 jute mills (including six nationalised units) in the country today with around 44375 looms and 609,600 spindles providing employment to around 2.50 lakh workers in the factory. The cultivation of jute provides livelihood to nearly 40 lakhs agricultural labourers in the rural community. The marketing of jute and jute products and other ancillary activities also generate employment for several lakhs of people.

The jute industry is highly labour-intensive and accounts for about 25 per cent of the world production and export of jute goods. □

More shelters for homeless in the Seventh Plan

THE SCHEMES for shelter and dwelling units for the homeless in the Seventh Plan will receive greater attention in view of the action plans for the United Nations International Year of Shelter for the Homeless (1987). As the task involved is colossal, institutional financing will have to be strengthened and also new technology adopted for low cost construction.

India may have to seek greater involvement of the international organisations and bilateral aids for the purpose.

India stands committed to the goal of providing a shelter to all the homeless by the year A.D. 2000. India is determined to achieve the maximum within its limited resources during the 1987 United Nations International Year of Shelter for the Homeless.

The provision of shelter was a burning problem for the millions of shelterless people living in the developing countries. The shortage of dwelling units in both urban and rural areas is colossal. The situation is worsening by unplanned and unregulated urban growth. India's present housing shortage was that of 24 7 million housing units—18 8 million in rural areas and 5 9 million in urban areas. The removal of this shortage needs attention of Governmental agencies, the public sector and the individual efforts.

A National Focal Point has been identified and a national Apex Body has started functioning to devise and implement shelter programmes for the IYSH action plans. The State Focal points have also been designated and the process of identification of target groups has started. The schemes for increasing the provision of shelter and improving the neighbourhoods are being implemented. These will be extended and outlays increased during the Seventh Five Year Plan.

Some of the programmes already under implementation include providing house sites to the landless rural families, giving construction assistance, sites and services schemes, improvement in the environment of slums and squatter settlements and construction of more houses for the economically weaker sections.

At least 17 million additional houses would be needed during the Seventh Five Year Plan for the increasing population. Along with that will be needed the growth of infrastructure for providing basic facilities of electricity, water supply, roads, sewerage and garbage collection.

IYSH-1987 was meant for generating consciousness for the need for taking up a massive programme for providing shelter to the homeless. A lot of important work has got to be done before and after the year 1987. ☐

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Postal expansion during Seventh Plan

DURING THE SEVENTH PLAN, the Postal Department has proposed to open 12,000 Post Offices. For improving the delivery in rural areas, it is proposed to appoint 4,000 extra departmental delivery agents during the Plan period. For 1985-86, the target is the appointment of 800 extra-departmental delivery agents. Ten thousand letter boxes will be installed during the Plan period. The target for 1985-86 is the installation of 2,000 letter boxes.

It is proposed to provide counter-facilities in 15,000 villages not having Post Offices. Such facilities will be provided in 3,000 villages in the year 1985-86. To monitor the implementation of the expansion of Postal Services in the rural areas, particularly in backward and tribal areas, it is proposed to strengthen the Plan Monitoring Organization by appointing 50 Plan Monitoring Inspectors during the Plan period. Ten Plan Monitoring Inspectors will be appointed in 1985-86.

The Department has taken a decision to construct 1,600 Post Office buildings, 100 RMS buildings, 75 administrative office buildings and 25 Postal Stock Depots and Stamp Depot buildings during the Seventh Plan period. The target for 1985-86 would be 86 Post Office buildings, 17 RMS buildings, 23 Administrative buildings and 23 Postal Stock and Stamp Depot buildings. It is also decided to acquire sufficient number of suitable sites for constructing proper work facilities at important places.

In respect of staff quarters, the Department will construct 27,000 staff quarters during the Seventh Plan period. 3,500 staff quarters will be constructed during the year 1985-86. ☐

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Better education,
better nation

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Use energy
with care

NFXT ISSUE

Towards better
industrial relati

More help to combat Assam floods

THE GOVERNMENT OF INDIA has released Central loan assistance of Rs. 51.9 crore for flood control works to the Government of Assam during the first four years of the Sixth Five Year Plan. During 1984-85, an amount of Rs. 10 crore has already been released to the State. Out of this, the last instalment of Rs. three crore was released in the last week of February, 1985.

Considering the gigantic problem of flood control in the Brahmaputra valley and the inadequate resources of the State Government, the Centre has been providing loan assistance for flood control works in the Brahmaputra valley since 1974-75. Till the beginning of Sixth Five Year Plan, i.e., upto March 31, 1980, an assistance of Rs. 45.1 crore was provided to the State for these works.

The State Government has been undertaking various works for flood protection, anti-erosion and improvement of drainage in the valley. The extent of physical works carried out upto March, 1984 include embankments of 3407 kilometres, drainage channels of 493 kilometres, protection works in 35 towns and 90 villages. Out of total floodprone area of about 29 lakh hectares in the Brahmaputra valley, these works have provided a reasonable degree of protection to an area of 13.75 lakh hectares upto March, 1984. □

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Better education, better nation!

R.K. Bhandari

The author reviews the development of education since 1950 and strategies adopted from time to time and the results achieved. He laments that shortage of funds, lower per capita facilities to students, apathy of teachers and administrators to implement innovative and new experiments and lack of motivation and dedication are some of the major causes of poor delivery system in education sector. In the context of the approach to the Seventh Five Year Plan, he has raised some key issues like enhanced central assistance, curbing expansion of educational institutions, delinking degrees from jobs, etc. and suggests practical solutions to various problems obstructing the spread of education which is purposeful, socially and economically.

FREE INDIA LAUNCHED its ambitious Five Year Plan in 1951. It was an unprecedented experiment in history for a democratic country, with agrarian and backward economy, to speed up its economic growth through planned management of its human and material resources. This goal of economic growth had its necessary implications for educational development in the country.

In the first Plan it was mentioned that education, being of basic importance in the planned development of a nation, educational machinery should be geared for those specific tasks which the nation sets itself through the plan, so as to make available in the various fields personnel of suitable quality at the required rate The second plan stated that the system of education had a determining influence on the rate at which economic progress was achieved and the benefits which could be derived from it The third plan referred to education as the most important single factor in achieving rapid economic development and technological progress and in creating a social order founded on the value of freedom, social justice and equal opportunity The Fourth Plan emphasised on the removal of the deficiencies in the existing educational system and to link it more effectively with the increasing demands of social and economic development, to remove internal stresses and strains developed during the first three plans and to extend the system in response to social urges and economic needs The Fifth Plan determined education as a supplier of requisite number and quality of persons needed for various tasks by inculcating among the mass of the people appropriate attitudes, skills and personality traits and proper climate for development. The Sixth Plan assigned key role to education in the process of human resource development and to provide for mass education through programmes of universalization of elementary education and adult education

As a result of implementation of the six Five Year Plans, there has been a phenomenal expansion in the field of education in the country as is shown in the following table.

Educational Development from 1950-51 to 1984-85

Item	Year				
	1950-51 (Actual)	1960-61 (Actual)	1970-71 (Actual)	1980-81 (Actual)	1984-85 (Likely)
1	2	3	4	5	6
A. *Institutions* (Number) .					
(i) Primary	2,09,671	3,30,399	4,08,378	4,85,538	5,50,000*
(ii) Middle	13,596	49,663	90,621	1,16,447	1,40,000*
(iii) High/Higher Secondary	7,288	17,257	36,738	51,594	60,000*
(iv) Colleges .					
(a) Art, Science & Commerce	548	1,161	2,587	3,393	3,500*
(b) Professional	147	381	1,017	1,382	1,500*
(c) Universities & Deemed Universities	28	44	93	123	135
B. *Enrolment by Stages* (in '000)					
Primary (I—V Classes)	19,155 (42 6)	34,994 (62 4)	57,045 (76 4)	72,688 (83.1)	84,766 (Targets) (97 6)
(ii) Middle (I—VIII Classes)	3,120 (12 7)	6,705 (22 5)	13,315 (34 2)	19,846 (40 0)	27,383 (Target) (51.9)
(iii) High/Higher Secondary/Intermediate	1,481	3,483	7,167	11,281	13,490*
(iv) University & above (Ist Degree)	174	557	1,956	2,752	3,442*
C. *Expenditure* (Rs in crores)					
Total	114	344	1118	3746	6000**
Plan	20	90	115	520	800*
Non-Plan	94	254	1003	3226	5200

*Estimates

Sources. (i) For School Education & Expenditure—Ministry of Education and Planning Commission.

(ii) For Higher Education—UGC Reports.

Figures in parenthesis indicate Gross Enrolment ratios.

Institutional expansion

It will be seen that the recognised educational stitutions in the country have increased manifold. imary schools have increased from 2.09 lakhs in '51 to nearly 5.5 lakhs at present (nearly 3 times), iddle schools have increased from 14 thousands to arly 140 thousands (nearly 10 times), high|higher condary schools from 7 thousand to 60 thousands nore than nine times). Similarly, the number of iversities have increased by 5 times and colleges 7 times during this period. The total enrolment the country has increased from 24 million in 1950-51 nearly 125 million at present. While the enrolment primary classes (I—V) has increased from 19 million 84 million, (4½ times), the enrolment in middle asses (VI—VIII) has increased from 3 million to arly 27 million (9 times). The increase of enrolment secondary stage is also by nine times, it having in-eased from 1.5 million to 13.5 million. Similarly at e collegiate stage, the enrolment has increased from 0.2 million to 3.5 million (17 times). Looking at the progress of expenditure on education, one find that it has increased more than 15 times during the span of 35 years, from Rs. 114 crores in 1950-51 to more than Rs. 6000 crores in 1984-85. This, in brief, has been the quantitative expansion of the education sector in the country during the past 35 years.

Removal of imbalances

This expansion has also helped the needed equalisation of educational opportunities and removal of regional imbalances to some extent and thereby increased the occupational mobility, served the depressed groups and threw new bands of workers with a view to balancing the economy and the society. In fact, the developed educational system has produced highly qualified and trained scientific manpower which can match any advanced country. But there has been an inverticle and lop-sided expansion in various sub-sectors of education. The expansion at the elementary stage,

crore if the goal of universalisation is to be achieved Since children belonging to poorer sections of the society, including girls, cannot afford to attend whole time schooling with fix schooling hours, the formal system of elementary education cannot alone help in achieving this goal of universalisation For this section of the children and also for huge drop-outs (75 per cent), the programme of nonformal education in a big way is recommended so as to provide basic literacy to all children upto 14 years of age

Secondary Education

Besides adequately providing for the normal flow of enrolment in classes IX—XII, emphasis will have to be laid on improvement of Science teaching, introduction of SUPW, vocationalisation of higher secondary education and use of educational technology and, above all, improvements in the curriculum and text-books and in-service training of teachers Common School Complex is another quality improvement which have been emphasised in this sector.

University education

The programme of distance|open learning system on a massive scale to provide facilities for higher education for a substantial part of the projected additional enrolment (roughly over 10 lakhs) has been envisaged in the Seventh Five Year Plan Besides, restructuring of under-graduate courses to make them more relevant and meaningful, improvements in the quality and standards of higher education, extension of applied research in universities and greater attention to the strengthening of existing infrastructure, including management, are some other important programmes in this sector Delinking of degrees from jobs is another important policy frame included in this sector

Adult education

Eradication of illiteracy by 1990 is a National Programme included in the 7th Plan, which implies turning nearly 11 crores illiterates in the 15-35 age-group into literate Major thrusts for this programme would be a target group approach for disadvantaged groups of the society, involvement of voluntary agencies and educated youths in this massive programme of adult education Electronic and folk media for motivation and promotional purposes will also be utilized

Technical education

Main emphasis during the Seventh Plan are proposed to be laid on consolidation and optimum utilisation of existing infrastructure and facilities, identification of critical areas and creation of infrastructure in new areas of emerging technology; improving quality and standard of education, modernisation of laboratories and effective management of the overall system. Major thrusts areas would be (a) improvement of polytechnics; (b) removal of obsolescence; (c) computerisation; (d) women education; (e) application and extension of science and technology to rural development, (f) continuing education; (g) interaction between technical education and industries and (h) removal of regional imbalances.

Major strategies

Major strategies to achieve the goal and objectives of the Seventh Five Year Plan for education are *inter-alia* . (i) detailed block and school level planning with community participation and effective linkages with local environment and developmental activities is envisaged as a major strategy to overcome the general obstacles associated with achieving the goal of universal elementary education and eradication of illiteracy; (ii) improvement of quality and relevance of education including, among others, improvement in Science and Mathematics teaching at all level and training of teachers is another important strategy for achieving the goals, (iii) non-formal education and open learning systems are envisaged in providing a net-work of learning opportunities to those who cannot| do not avail of the formal system's facilities for one reason or the other, (iv) vocationalization will be specially promoted to provide skills needed for the economic development and impart a new dynamism to its growth by raising productivity, (v) in the secondary and higher education sectors, special efforts would be made for consolidation and improvements of standards and introduction of related pedagogical reforms, (vi) adoption of low-cost measures, besides mobilization of additional resources from Private Sector is another strategy to face resource constraints and (vii) to improve the internal efficiency of the education system with a view to achieving and maintaining high level of performance, which is emphasised in the 7th Plan over and above the quantitative expansion

Financial requirements

Against the Sixth Five Year Plan outlay of Rs 2524 crore for educational development programmes, as outlay of Rs 15,440 crore has been recommended by the Steering Group on Education and Culture and Sports for the Seventh Five Year Plan On the face of it, this outlay may look to be on the high side, but considering the task involved, particularly in the achievement of the goals of universalisation of elementary education and eradication of illiteracy, with a change in the design and contents of the educational system to make it more relevant to the needs of the society, these estimates are the minimum required for this purpose In the field of education as in many other social sectors, non-Plan expenditure have been dominant (87 per cent) of public expenditure. But since non-Plan expenditure has been used only on maintaining the existing levels and standards of education, plan funds are necessary for achieving landable goals and objectives laid down in the Seventh Five Year Plan. If enough plan funds are not made available, the goals and objectives and physical targets envisaged in the plan are likely to fall short of and very little improvements in the quality and standards of education can be

rapid as it is, has not achieved so far the constitutional goal of Universalisation of Elementary Education. The expansion at the secondary and higher stages of education has not provided the needed skills and employability for linking the system with the economic life, resulting in a mis-match of demand and supply of educational products and huge stock of educated unemployed, the shortage of trained selected manpower notwithstanding.

Emphasis on training

Although the programmes of qualitative improvements and internal transformation of the educational system to relate it intimately to the life, needs and aspiration of the people were given a low priority during this period, it would be wrong to assume that they were neglected altogether or to accept, at its face value, the oft-repeated statement that educational standards have seriously gone down. The truth is that this has also been a mixed picture of light and shade of some achievements in some sectors and several shortfalls in others. Teacher is considered to be the central factor for any qualitative improvements in the education sector. Not only the pay scales and working conditions of teachers have been substantially improved, but the orientation programmes of the NCERT, SCERT and SIEs in various States, which were set up during this period, have contributed a lot not only in improving the percentage of trained teachers but also in their outlook and teaching profession For instance, the percentage of trained teachers in primary schools has improved from 53 in 1950-51 to 90 now

Glaring lacunae

At the level of educational programmes, the methods of teaching science and mathematics have improved, particularly in secondary and higher educational institutions. Similarly, attempts have also been made to improve curricula and teaching material, to adopt better methods of teaching and to implement some reforms in examination system. But the overall impact of all these measures is so far too inadequate and has failed to make any significant change in the traditional system of teaching and evaluation. Shortage of funds, lower per capita facilities available to students, apathy on the part of teachers and administrators to implement innovative and new experiments, non-utilisation of existing facilities intensively, lack of motivation and dedication are some of the major causes of the poor delivery system in the education sector. At the level of students, apart from a few exceptions of first-rate students, the number of ill-motivated students with sub-standard attainments has increased Consequently he serious problem of wastage and stagnation (77 per cent at the elementary stage) continue to dominate he scene and education has become irrelevant to majority of them, both from the point of view of attainments and economic life. The present situation in respect of educational standards is obviously too unsatisfactory to leave any room for complacency.

Approach in the Seventh Plan

The Approach to the Seventh Five Year Plan for Education has recognised that "The existing education system is widely felt in its contents and processes to be dysfunctional to the requirements of the country, and in need of radical changes". Educational researchers and administrators have admitted to the failure of the present educational system in forging its linkages with national development, resulting in wide mismatch of the educational system and manpower requirements and/or the needs of the society, in spite of the unprecedented expansion of educational facilities and producing highly skilled manpower, most of which is being utilized by other countries.

The Report of the Steering Group for Education in the Seventh Plan has recommended a new design of education, which is flexible, varying, relevant and linked to widely diverse local culture and social environments. The emphasis have been laid on innovation, on low-cost alternatives and societal involvement, all aimed towards linking education effectively to the needs of the pupil, to employment and to development. The reforms should aim at continuous improvement of standards at all levels and even more importantly at greater equity.

Major thrusts and programmes

The following major programmes are envisaged in the Seventh Five Year Plan for education :

(i) Universal elementary education by 1990;

(ii) Removal of illiteracy in age-group 15-35 ;

(iii) Qualitative improvements and reorientation of education at all stages with a view to linking it to national needs and development, with particular emphasis on vocationalisation of higher secondary education, improvements in science teaching at secondary stage, improvements in the standards of education, restructuring of courses in higher education, extension of Applied Research facilities at university stage; and

(iv) Modernization of technical education.

A brief account of the major programmes included in the main sub-sectors of education is given below :—

Elementary Education

Universalisation of elementary education has been duly accorded top priority. Despite substantial progress achieved so far (nearly 11 crore enrolment by the end of the Sixth Plan), the magnitude of the Plan is still immense there being over 6 crore children of 6-14 age-group to be brought into schools during the Seventh Plan, if goal of universalisation is to be achieved by the end of the 7th Plan, which is the policy goal. Another dimension of the problem is that the present rate of nearly 40 lakh additional annual enrolment under formal system is to be raised to 1.25

be achieved. It is seen that the percentage of the plan funds allocated for education has been going downn from one Plan to another (from 7 2 per cent in the First Plan, it came down to 2.6 per cent in the Sixth Plan). There is, therefore, a genuine case for raising the plan allocation for education, if we decide to achieve at least the two national goals of universalisation of elementary education and eradication of illiteracy.

If the needed plan resources from the Public Sector are not likely to be made available, the other strategy suggested by the Steering Group is with regard to the mobilisation of additional resources for which various recommendations have been made by the Working Group on Resources for Education such as raising fees in secondary and higher educational institutions, levying additional education cess and reviewing plan and non-Plan expenditure towards its utilisation for development purposes and also by adopting low-cost devices Nevertheless, the share of the plan resources for education is needed to be increased substantially in view of the bulging nature of the education system, as a result of increase in population and escalation of cost.

Key issues and solutions

Increased Assistance

Education, although now a concurrent subject, is at present essentially within the sphere and competence of State Governments While the State Governments are, on an average, apportioning nearly 25 per cent of their Revenue Budget on Education, Centre is spending only 3 per cent of the Central Budget on education. Some of the educationally backward States are spending even less and may not be in a position to raise further the quantum of allocation for education Particular central assistance is sought for helping the 9 educationally backward States in achieving the goal of universalisation of elementary education and in all States for improving science education, vocationalization of higher secondary education, eradication of illiteracy and improving quality and standards of education It is felt that unless the Centre increases its level of assistance through a network of specially formulated centrally-sponsored schemes in the thrust areas outlined above, very little headway can be made towards the achievement of national goals and eventually national integration; NDC's decision is required in this regard.

Better use of existing resources

Although there is a need for increasing the plan allocation for education, it is also desirable that determined efforts be made to economise and optimally used available resources for education. Apart from the periodical review of plan and non-Plan funds available for educational development, optimal use of existing infrastructure, curb on unplanned expansion, modification of grants-in-aid code to reduce Government burden for future expansion and administrative measures for reducing cost and improving efficiency, the major issue which needs discussion and decision is with regard to the appointment of teachers in elementary schools under the formal system. Nearly 95 per cent-97 per cent of the Revenue Budget in elementary education sector is spent on the salaries of the teachers. Generally all posts of teachers are filled on plan side, while vacancies are kept unfilled on non-plan side, which eats into the scarce plan resources available for this sector. It is, therefore, proposed that the State Governments should be asked to review the deployment of teachers, as recommended by CABE and take steps to fill up the vacant posts on the non-Plan side which will help in reducing the future requirements of the teachers. Also, if the prevalent teacher-pupil ratio of 1 40 is raised to 1 : 50, it will not materially effect the teaching process, as the average daily attendance of elementary classes is about 70 per cent and the effective teacher-pupil ratio come to 1 : 35. There would, therefore, be hardly any need for the appointment of additional teachers during the Seventh Five Year Plan, except in case of new schools that may be required to be opened in backward and sparsely populated areas If a policy decision on this is taken, this will release enough plan funds to be used for quality improvements programmes aimed at reducing wastage and drop-outs and for providing minimum literacy to every citizen of the country

Curbing expansion

Policy decision is also required to be taken with regard to future expansion in secondary and university education sectors It has been noticed that quite a large number of secondary schools have been established in the last two to three years of the Sixth Plan and inspite of the guidelines issued by the UGC for the opening of new colleges and universities, there has been a lot of proliferation of non-viable colleges in the country. This has been done by diverting funds from the priority sectors of primary education and adult education to non-priority areas of secondary education and university education There is also a need for modifying the grants-in-aid code prevalent in the States to check the expansion.

Delinking degrees from jobs

Delinking of degrees from jobs has been recommended by various bodies, but no action plan has been prepared in this regard or policy decision taken. Since this step is likely to help in curbing unplanned expansion of colleges and university courses, an urgent attention is required to be given to this reform which will help in economizing the scarce plan resources available for educational development.

Helping adult literacy

The massive programme of adult education cannot be undertaken by the Education Departments alone, both from the point of view of the magnitude of the

(Continued on page 20)

Nuclear energy : some issues and choices

Shibdas Burman

The author, a geophysical scientist, surveys briefly various processes of generating nuclear energy for peaceful purposes. With the help of diagrams and tables, he compares the nuclear energy programmes undertaken by various countries, the installed capacity and the share of nuclear energy in the total power generating capacity of each country. He also briefly touches upon the various nuclear power generating projects in India.

In 1960, the Indian Atomic Energy Commission submitted its first concrete proposal for the setting up of nuclear power stations in India. Since the Commission wanted to demonstrate that nuclear energy can be used to generate electricity at competitive costs and low enriched uranium fuelled and light water moderated Boiling Water Reactor (BWR) was already economical in comparison with thermal stations, negotiations were held with the US Atomic Energy Commission for the establishment of the Tarapur station. The prohibitive cost of uranium enrichment technology compared to that of heavy water, prompted India to opt for pressurised heavy water reactors (PHWRs) for the subsequent stations. This type of reactor, using natural uranium fuel and heavy water moderator, offers the maximum economy in neutrons producing maximum amount of useful energy and plutonium which is so vital for the second stage. (H. N. Sethna)

The three stages

Under our nuclear energy programme, three stages are envisaged to reach take-off stage. The first stage is based on power production by thermal reactors using the Pressurised Heavy Water moderated Reactors (PHWRs). The natural uranium resources identified in India indicate that a natural uranium reactor programme of 5000—8000 MW could be sustained. More exploration work may show the likely existence of further quantities of recoverable uranium resources in new locations and, therefore, it could be possible to undertake a much larger thermal reactor programme. Presently, India has a target of about 10,000 MWe by the end of this century. The total installed nuclear capacity at present is 1095 MWe—420 MWe from the Tarapur Atomic Power Station, 440 MW_e from the Rajasthan Atomic Power Station and 235 MWe from the first of the two units (2×235) of the Madras Atomic Power Project. The continuing power projects under construction are the MAPP second unit (235 MWe) and the Narora Atomic Power Project (2×235 MWe). Work has also been initiated on another atomic power station (2×235 MWe) at Kakrapar in Gujarat. The Indian AEC proposes to install another 12 units of 235 MWe pressurised heavy water reactors and 10 units of 500 MWe pressurised heavy water reactors by A.D. 2000, costing about Rs. 13,900 crores based on 1983 prices.

The second stage envisages the use of fissile material plutonium which is generated, reprocessed and acc-

The views expressed are those of the author

mulated, in the first stage, for starting fast breeder reactors, wherein more plutonium from the depleted uranium (of the first stage) or uranium 233 from thorium 232 is bred. It is estimated that about 2,700 MWe of installed capacity of PHWRs working at 75 per cent load factor produce about 900 kg of plutonium every year which would be sufficient to support a programme of one new 400—500 MWe fast breeder reactor every alternate year.

The third stage will consist essentially of use of plutonium produced in the second stage for making more fast breeder reactors. Uranium 233 produced in the second stage is proposed to be used for constructing breeders. Additionally, advanced thermal converter reactors based on uranium 233—thorium 232 are proposed to be constructed, wherein more plutonium and uranium 233 can be produced for further recycling into fast breeders. It is planned to ultimately achieve a self-multiplying power generation system essentially based on uranium 233—thorium 232 thermal and fast breeder cycles (H. N. Sethna). The FBRs would first be based on plutonium and depleted uranium, and subsequently on uranium 233 and thorium.

Nuclear source materials

India's indicated and inferred reserves of uranium ore is estimated to be of the order of 73,000 tonnes of U_3O_8, in addition to about 363,000 tonnes of ThO_2 contained in the monazite sand along the beaches and inland placer deposits. It is thought that if we want to aim at long range nuclear power programme our system should shift early to the uranium 233—thorium 232 base. The much larger deposits of thorium compared to that of uranium brings in the essential difference of the Indian nuclear energy programme compared to that of the most of the Western countries.

A fast breeder test reactor [FBTR—40 MW (thermal)] is in an advanced stage of construction at Kalpakkam near Madras. The success of our fast breeder programme or even the entire nuclear energy programme would essentially depend on the extent of success we achieve in running the first generation nuclear plants and extracing plutonium from them for use in the fast breeder reactor (H. N. Sethna).

Nuclear power : abroad

The Table 1 which has been taken from Raja Ramanna's Meghnad Saha Medal Lecture—1984, summarises the nuclear power programmes of various countries. At the moment there are over 313 nuclear reactors in operation all over the world contributing about 12 per cent of the total electrical power being generated. Together they constitute an installed capaciy of about 1,90,000 MWe. In addition, over 200 nuclear power reactors under construction at present are expected to add a further 1,90,000 MWe.

Performance

The performance of the operating nuclear power stations during the year 1984 (July 1984) is attested by the capacity and availability factors achieved by these (Table II, Raja Ramanna, 1984). As observed by Raja Ramanna, it is a matter of pride that the indigenously constructed Madras—I operated at a capacity factor of 93 per cent and the availability factor of 99.8 per cent during July 1984. About Rs. 512 crores of revenue have been earned till July 1984 from the operations of nuclear power stations in India. At present the sale of electricity from the operating nuclear power stations yield nearly Rs. 14 crores of revenue every month (Raja Ramanna, 1984).

Brief theory

Natural uranium contains an average 0.72 per cent U-235, the rest is U-238, so that the ratio of U-235 to U-239 atoms is about 1 : 139. Both of these are fissionable, but the probability (known as cross-section of reaction) of U-235 fission is much higher. The important reaction is

U-235 + 1 neutron   fission fragments + 200 MeV energy + 2.5 neutrons (average)

Most of the energy released is in the form of the kinetic energy of the fission fragments, which is transformed to thermal energy as the fission fragments are captured in the fuel matrix. The released neutrons have an average kinetic energy of about 2 MeV per neutron, which is much more than they would have in thermal equilibrium at the fuel temperature (the neutron thermal energy is 0.025 eV at room temperature). Thus the released neutrons also undergo a slowing down process.

At their highest speeds some neutrons cause fission with U-238. However, it is much more probable that high-speed neutrons interacting with U-238 will simply be slowed down without being captured or causing fission. This slowing down process is called "inelastic scattering". At low speeds the likelyhood of neutrons causing fission in U-238 is negligible, but the probability of fission capture in U-235 is appreciable, and varies approximately inversely with neutron speed. Reactors that rely on low-speed neutrons for most fissions are called "thermal reactors". (P.G. Hill, Power Generation, MIT Press, 1977).

One design task for thermal reactors is to provide means for slowing neutrons to thermal velocities without losing too many by nonfission capture in the fuel or supporting structure or by escape from the reactor. An average of 1 of the 2.5 neutrons released must be slowed down to the thermal speed range to cause a subsequent fission in order that the nuclear chain reaction can continue. Substances that slow down the neutrons without nonfission capture are called moderators. Graphites, heavy water and light water have extensively been used in reactors as moderators. If the moderator is light water, it is always necessary to use enriched fuel in which the fraction of U-235 is raised to perhaps 2 or 3 per cent. This is necessary in order to sustain a chain reaction. The process to enrich

uranium is costly, and the need for it can be avoided by using heavy water as the moderator. However, heavy water is expensive and requires an increase in reactor size per unit power output (P.C. Hill, 1977).

The thermal reactors differ mainly in :

1. fuel (natural or enriched uranium)
2. coolant (light water, heavy water, CO_2 or helium)
3. moderator (light or heavy water or graphite)
4. pressure vessel (single large cylinder or multiple pressure tubes).

In contrast to the light-water reactors, the heavy-water reactor contains the high-pressure coolant in tubes that pass through the unpressurized heavy-water tank. The fuel typically consists of UO_2 pellets clad with zirconium alloy. The coolant and moderator are both heavy water. The pressurized tubes are made of zirconium alloy. The pressurized tube concept has the advantage that as the reactor is scaled up to large size, there is no need for a pressure vessel with extraordinary thick walls. The most prominent of the heavy water reactors is the Candu, which does not have quite so high a cycle efficiency as the PWR or BWR (Boiling Water Reactor), but has considerably better overall utilisation of the fission energy available in natural uranium. This is because it can use natural uranium directly and consumes a large fraction of the U-235 contained therein. It also converts a larger fraction of U-238 into Pu-239.

Breeder reactor

In a breeder reactor more fuel (fissile material) is produced than it is consumed. In a fast breeder reactor the neutrons are not slowed down (that is, thermalised) as they are in a thermal reactor. In a fast breeder reactor, or more correctly, breeder fast reactor (although the former term has got into usage), the U-238 captures a neutron to convert itself to Plutonium 239. The reactions are :

1. fission of U-235 :
   Uranium 235 + neutron → fission + energy + 2.42 neutrons.
2. conversion of U-238 to Pu-239 fuel :
   U-238 + neutron → Pu-239 + 2e
3. fission of plutonium :
   Pu-239 + neutron → fission + energy + 2.87 neutrons.

The neutron production figures quoted above are the average numbers of neutrons produced in fissions due to incoming neutrons of thermal energies (about 0.025 eV). At higher energies the numbers released can be different. Not all of these released neutrons are available to cause new fissions. Some will be captured, in a process called "radiative capture", without causing fission. An important quantity, therefore, is the number n of neutrons potentially available to initiate further fission, which is equal to the number of neutrons released per fission minus the number that will be absorbed in radiative capture. For fissions caused by thermal neutrons, n is approximately 2.07 for U-235 and 2.11 for Pu-239.

For the rate of production of fissile material to be just equal to its rate of consumption, the minimum value of n is 2. One of the neutrons produced by fission would be needed to convert a fertile atom to a fissile atom; the second would be required to cause a subsequent fission. In practice, n is to be greater than about 2.2 for successful breeding, since some neutrons will escape from the reactor core or be absorbed in non-fertile substances in the reacter. In case of U-233 (obtained from neutron capture by Thorium 232) the breeding possibility (n becomes 2.2 or more) is realised for neutron energy which is approximately 4 x 10^5 eV (interpolation made from the figure No. 1 depicting the breeding possibilities in U-233, U-235 and Pu-239, A.J. Mooradian, 1973).

Table 3 lists the breeder reactors outside the US. The Clinch River Breeder Reactor Project (CRBRP, Oak Bidge, Tenn., US), a reactor that would have produced 1.4 times more fissionable plutonium fuel than it would consume, went into its demise in October 1983. In what follows the discussions will mainly be limited to the features of the Canadian system (Candu) and how it fares compared to the fast breeder system. A brief remark will be made about the siting of future stations.

Candu system

It is perhaps in order to begin discussions on the Candu system with a quote from Hans Bethe who studied the problems of nuclear power in America. He has the following to say about Candu :

> "It is a technical wonder. Not only is it very conservative in fuel, but it works with a regularity and a reliability that are absolutely fantastic. The reactor seems to be practically always available. Our reactors (the PWRs and the BWRs), because of the need to replace spent fuel and do other maintenance work, are available only 70 per cent of the time. The countries which have invested in Candu sets have decided that any extra cost is compensated by the economies which such a reactor makes possible. By using thorium and reprocessing the spent fuel, Candu would do so well that it would look at first sight as if it did not use any fuel at all".

TABLE I

Nuclear power programmes of various countries

Country	No. of units in operation	Total capacity of units in operation (MWe)	Estimated share of nuclear power capacity (as a %age of total electrical capacity)	No. of units under construction	Total city of units under construction (MWe)	Projected nuclear capacity (by year) MWe	Projected share of nuclear power capacity (as a %age of total elec. capacity)
	Status as of end 1983					Future programmes	
Belgium	6	3,473	27%	2	2,012	5,466(1990)	40%
Bulgaria	4	1,632	*	2	1,906	4,760(1990)	35%
Canada	15	8,303	8%	8	5,925	14,615(1995)	12%
France	36	26,903	37%	25	29,200	**(1995)	75%
German, Democratic Republic	5	1,694	*	**	**	9,000(1995)	**
Germany, Federal Republic	16	11,110	13%	11	11,908	30,000(2000)	**
Hungary	1	408	7%	3	1,224	4,760(2000)	45%
India	5	1,095	3%	5	1,175	10,000(2000)	10%
Japan	28	19,023	12%	10	10,022	62,000(2000)	27%
Republic of Korea	3	1,789	15%	6	5,474	7,616(1990)	41%
Spain	6	3,760	*	9	8,369	7,700(1990)	**
Sweden	10	7,355	24%	2	2,100	9,455 (1990)	28%
Taiwan	4	3,110	27%	2	1,814	9,928(2000)	41%
Union of Soviet Socialist Republics	43	20,671	7%	41	38,001	58,672(1990)	**
United States of America	80	63,315	13%	50	55,738	119,053(1990)	**
United Kingdom	35	8,304	10%	7	4,252	**	**

*In Bulgaria, Germany (Democratic Republic) and Spain, the elctricity generated by nuclear power stations as a percentage of total electricity generated during the year was about 32%, 12% and 9% respectively.

**Data not available.

Source: IAEA annual report for 1983 and news releases by the atomic industrial forum.

TABLE II

Performance of Nuclear Power Stations

(1)	Capacity factor (2)	Availability factor (3)
Tarapur—1	58%	93%
Tarapur—2 (since refuelling)	67%	94%
Rajasthan—1	69%	86%
Madras—1	65%	81%

Source : Raja Ramanna, Meghnad Saha Medal Lecture, 1984.

TABLE-III

Breeders outside the U.S.A.[a]

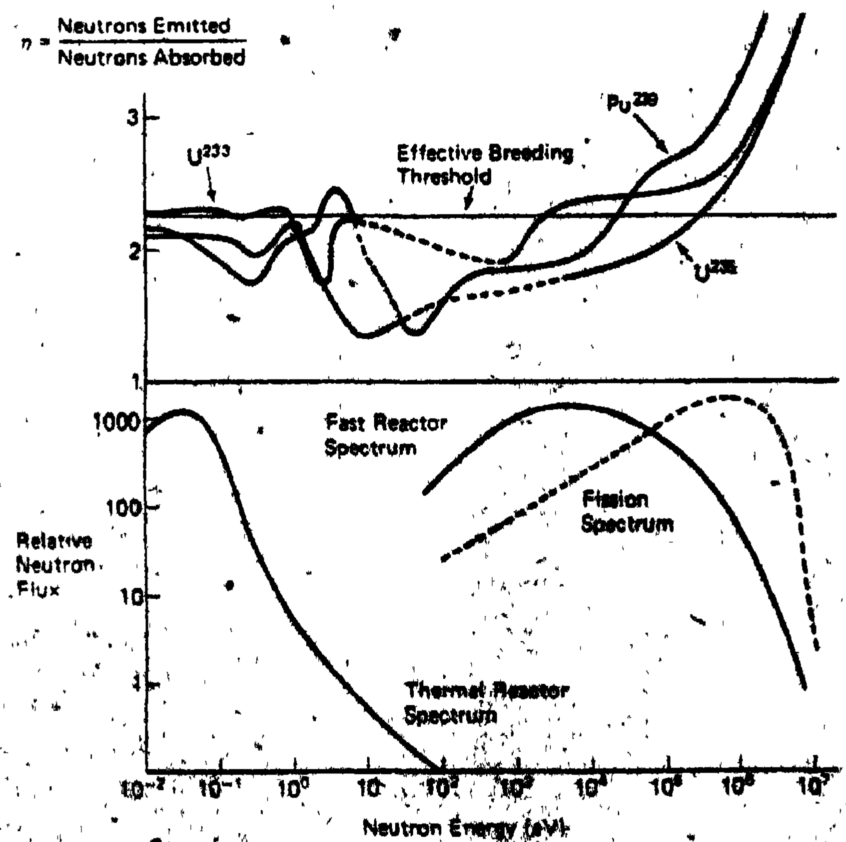
Country	Name and location	Net MW	year of order	Date of operation	Remarks
France	Rapsodie[c]	40		1967	Loop-type [b,c] shutdown in 1982
	Phénix, near Avignon	250	1967	1973	Pool-type [d]
	Creys-Malville, "Superphenix,"[e] near Lyon	1200	1977	1984 (Planned)	Pool-type

Country	Name and location	Net MW	Year of order	Date of operation	Remarks
Germany (West)	NKK II, Karlsruhe	18	1966	1979	
	SNR-300,[f] Kalkar	280	1972	1987 (planned)	
	SNR-2[g] (planned)	1300			
Japan	Monju, Tsuruga	280	1990 (planned)		
U.S.S.R.	BOR-60, Ulyanovskaya, Dimitrovgrad	12	1969		
	BN-350h, Shevchenkovskaya, Shevchenko., on Caspian Sea	150	1973		Loop-type
	BN-600, Beloyarskaya, near Sverdlovsk	600	1980		Pool-type
	BN-1600 (planned)	1600			
U.K.	Scotland	15		1959	
	Dounreay, Caithness, Scotland	250	1965	1975	
	CDRF (planned)	1300			

Note : in 40 countries outside the U.S., for nuclear reactors of all sorts, 207 representing 105 823 MWare in commercial operation; 163 (135 702MW) are under construction; 13 (12 574 MW) are on order; and 172 (159 963 M) Ware in some firm stage of planning. This represents a total of 555 units (414 062 MW), of which 15 are breeders.

aSatus as of Dec. 31, 1982, all liuid metal type
bUses sodium coolant loops as would LMFBR at Clinch River
cNever actually generated electricity
dUses a pool design for the sodium coolant
eIn collaboration with Belgium, Italy, West Germany, Luxembourg, and the Netherlands
fIn collaboration with Belgium, The Netherlands, United Kingdom
gIn collaboration with France and Italy
hWas planned also as a water desalination plant on the Caspian Sea; reportedly suffered sodium fires and explosions

Source : Atomic Industrial Forum (for statistics)
(Source: Environ. Sci. Technol. Vol. 17, No. 9, 1983)



(to be continued)

Promoting excellence in science

Rajendra Prabhu

With India taking up front line state of the art technology in its scientific and industrial advancement vigorous efforts are on to reach all round excellence with high quality science to back these efforts. The author here enlists several initiatives including the decision of the University Grants Commission to select every year 100 outstanding science students at undergraduate level to provide India with the high quality scientists to get into the 21st century with its great promises in every field of human endeavour.

WITH INDIAN INDUSTRY taking up such front line business ranging from building of nuclear reactors to manufacturing of semi-conductors chips, there is tremendous pressure for high quality science to back these efforts. The giant nuclear reactors are being upscaled from 235 MW to 500 MW. Conventional thermal power generation equipment which is already being built for such high ratings as 500 MW will in future be still higher sized—may be of 1300 MW. The tiny semi-conductor chips of no more than the size of a thumb nail with thousands of functions incorporated in each one of them, are to have much larger capacity even as they further shrink. These are quantum changes, a big jump demanding more skilled engineers and technicians of much higher calibre. But it is not enough to master the know-how; we must get at the basic know-why. Which means we need scientists of the highest quality and we need them fast in many disciplines.

Excellence, therefore, has become a new watchword in science. Last year, the entire session of the Indian Science Congress at Ranchi was devoted to this theme. It did not end there. The Department of Science and Technology set up a task force on the recommendations of this session. Now a whole crop of initiatives have emerged out of these exercises. A report on this was presented to the latest Science Congress Session at Lucknow.

New efforts

Topping this long list of initiatives is the decision of the University Grants Commission to select 100 outstanding science students at undergraduate level. They will be provided with a sizeable scholarship of two thousand rupees a month so that they could go ahead with their studies without any financial problem hindering their concentration. There is already at work a National Talent Scholarship Scheme for school and college students where the monthly stipend is two hundred rupees. The number of these scholarships is proposed to be raised four fold. What these scholarship could do is to sustain a reservoir of talent picked up right from the school level onwards.

Some other initiatives

There have been some other initiatives as well. Some new research institutes have now materialised, for instance, an institute of plasma physics Ahmedabad, an institute for molecular biology in Delhi, another for immunology. There are other fields like telematics, silicon technology, computer sciences, etc. in which centres of advanced study, research and design are coming up. All these, you may note, are frontier areas of basic sciences. They hold the future in their hand, so to say.

May be, all these initiatives will take sometime to show tangible results. Some of the well known

(Continued on page 20)

Use energy with care

Dr. Qamar Ahsan

Shortage of electricity for industries and fuel for transportation has slowed down the development of many third world countries. Since the energy sources are neither unlimited in number nor everlasting, they have to be used very judiciously. The author suggests certain steps for conservation of energy resources.

THE ENERGY CRISIS IS a classical example of the present multidimensional global problems. The crisis did not emerge all of a sudden with the petroleum price hike in the early seventies. There have been ample signs of energy crisis for years particularly in developing countries like India.

The energy crisis in India is real and it is dangerously affecting the vital sectors of economy. The power famine, which has been affecting India since 1972-73, forced the States to resort to power cuts ranging from 25 to 75 per cent. It is estimated that a 10 per cent power cut results in Rs. 7000 crore loss per year in production in the industrial sector alone.

Similarly, transport and agriculture are also hit hard both due to shortage of power and petroleum products and due to steep rise in energy prices. With the quadrupling of oil prices, particularly of the petroleum products, the cost of industrial and agricultural inputs have also increased considerably and thereby increasing the cost of end products. Despite the shortage and price hike, the demand for petroleum energy has increased on an average of 15 per cent per annum, which has further aggravated the energy crisis.

Commercial sources

The various sources of energy supply are generally classified into commercial and non-commercial. The commercial form consists of energy obtained from consumption of minerals and fossil fuels like coal, oil, uranium and electric power obtained through thermal or nuclear generation or through primarily hydroelectric process. Non-commercial energy covers energy derived from human or animal efforts, biomass (fuelwood, agricultural wastes, etc)., sun, wind and geothermal processes. However, the commercial forms of energy such as oil, electric power have been important source of power for industrialization. These are viable forms of energy which help automation.

Petroleum

Some of the petroleum products are essential source of commercial energy. They make the transportation possible and also help in production of fertilizer inputs from the agricultural sector. However, the sky-rocketting price of the petroleum products since 1973, has led to serious balance of payments problem in oil importing developing countries.

The crisis in the international oil market has produced distortions in the development priorities and has led to widespread inflation. The import of the crude oil in India during 1982-83 was 17 million tonnes out of the total consumption of 34 million tonnes and the total oil import bill was Rs. 5597.7 crore out of the total import bill of the country of Rs. 14355 crore. The corresponding export earnings stand merely at Rs. 8829 crore. This has led to drainage in foreign exchange reserves. Oil is, therefore, the most critical source in the country and dependence on it needs be controlled and discouraged.

Electricity

The other major source of commercial energy is electric power obtained through thermal and hydel processes. Attempts have been made to increase electric power generation in India during the five-year plans. The generation capacity has increased from 2300 MW in 1950 to 32410 MW by 1981-82. But the actual addition in generation capacity has always fallen short of targeted growth of the power sector.

The total electric power availability lags far behind the total demand in the country which is growing at the rate of 6.2 per cent per year. Capacity utilisation in the power plants in India has seldom exceeded 50 per cent of the installed capacity. The power generation problem has become so serious that frequent load-shedding, power-cuts, trippings and even power holidays' have become a regular feature and many States like Maharashtra, West Bengal, Tamil Nadu resort to 50 per cent cut in power supply.

The major problem associated with the coal consumption is the transport bottleneck. Most of the coal mines are located in the Eastern India and it is difficult to transport coal to the other distant areas through the present railway network. This results in widespread coal shortages in southern and western areas.

Non-commercial

On the other hand extensive use of non-commercial traditional fuels mainly obtained from fuel-wood and animal wastes, contain element of paradox. The local renewals energy sources in their traditional forms are not capital intensive and they do not require imported technology. But they are being pressed by growing population and by the very process of development which requires more energy for production and domestic purposes. Excessive demand for fuel-wood will undoubtedly result in the vicious cycle of de-forestation, soil erosion and siltation which will lead to reduction in yields from food crops and forest products. The burning of cattle dung sacrifices its utility as manure and thus deprives the farmers of a cheap source of fertilizer.

Energy sources are also not unlimited. At the present rate of energy consumption, oil and natural gas will be exhausted well within half a century. The availability of uranium is insufficient and limited in geographical areas. Even the fast breeder reactors can not stretch the life span of nuclear fuel indefinitely. The coal which is abundantly available at present, will also be exhausted if it is exploited without any restraint. The new energy technologies such as solar, biomass, wind or geothermal, which are considered to be the major source of energy supply in the years to come, will take decades of scientific research and development for their economic utilization.

Energy conservation

The immediate problem therefore, in the light of serious petroleum and electric power shortages, is the optimum and most economical use of available energy resources. A careful analysis of the problems of energy requirements of various sectors of economy favours an intelligent combination of reduction of waste caused by negligence and inefficient usage. Reduction of the demand for energy by price rise or increased production of energy are two other methods of tackling this chronic shortage problem. But these methods will, in the first place, adversely affect industrial production process and transport system and retard the economic growth of the nation. Secondly, it is not possible to step up energy production greatly due to physical and technological constraints. Thus demand for energy must be decreased through reduction in wastage of energy. The key to the solution of this problem lies in healthy and determined effort towards energy conservation in the different sectors of economy.

The industrial sector

The industrial sector is the second major consumer of commercial fuels in developing countries. It is the largest consumer of liquid fuel and its share is increasing with the rapid pace of industrialization. Industrial energy conservation can be achieved through more energy efficient processes. The developing nations with greater emphasis on industrialization should develop their infrastructure and adapt such industrial technologies as conserve substantial energy at the onset rather than copying patterns evolved in developed countries where energy was cheap. The ideal solution for many industrial projects where there is abundant supply of labour, may lie in adopting technologies which substitute labour for both capital and energy, whenever such choices are available.

Imported petroleum products and other expensive energy sources can also be saved through substitution of other cheap and locally available resources by introducing suitable change in industrial designs. However, fuel substitution possibility is not unlimited due to geographical and technological constraints.

Another important method of energy conservation could be research and development of energy efficient processes. Energy research groups should be encouraged to investigate potential energy saving techniques, energy forecasting and systematic approach to energy management. Energy efficiency suffers greatly in the case of various types of outmoded industrial furnaces where 50 per cent or more heat is lost in exhaust. For example, in steel and alloy industries in India, heat loss in furnaces accounts for 55 per cent of the total heat generated. The heat loss in copper brass industries is over 52 per cent while it is 50 per cent in aluminium industries. It is possible to increase their energy efficiency by using heat recovery equipments. It is also possible to generate substantial energy saving by careful redesigning and gradual replacement of inefficient equipments and methods

Transport sector

The energy conservation in transport sector requires special attention as it consumes large quantity of scarce petroleum products. Transport sector in India alone accounts for over 50 per cent of the total oil consumption. In view of the huge foreign exchange involved, the deficient internal supply can be reconciled with the rising demand only through a well planned conservation policy.

(Continued on page 19)

Why integrated tourism planning?

Sahita Chopra

Emphasising the need for integrated planning for tourism in the country, which has been neglected hitherto by the Government of India, the author says such planning should involve local level planning, linking tourism to other social and economic sectors of policy making. Tourism is a multi-composite activity and planning for it involves an integration of knowledge at the different levels of policy-making, which is a challenging task.

THE SAD PLIGHT OF the Third World Countries in their struggle towards economic development has been revealed in a most blatant and crude form in the recent industrial disasters. Having poor technological know-how and few means of earning foreign exchange at their disposal, the LDCs need to adopt a different strategy of development if they are not to become victims of manipulation in the hands of the industrial nations. This was recognised even during the 1960s when the United Nations recommended the opening of the LDCs to International Tourism.

Tourism is a smokeless industry and therefore, the risks involved in tourism promotion are few. This industry has the potential to reduce the proportion of capital which is the most scarce resource in the LDCs—to the proportion of labour which they have in abundance. Tourism has been hailed as an ideal and quick path to development because of its ability to generate foreign-exchange, income and employment and to make positive contributions to the balance of payments. It has a short gestation period also.

The above mentioned features have lured many developing countries to welcome tourism with great zeal and enthusiasm. In many countries of Asia, Africa, Latin America and islands of Pacific and Far East, tourism has been promoted in a big way but unfortunately without planning involving scientific research. The results have been disastrous. The short but unhappy experience of these countries prove beyond doubt, that tourism in the absence of adequate planning, can erode the socio-cultural and economic structure of a society, besides upsetting the ecological balance. Equally striking, has been the realization that tourism can assume a form of neo-colonialism and imperialism, when due to improper planning, the control of touristic enterprise is vested in the hands of big multinationals operating international chain of hotels and airlines.

Integrated tourism planning

Planning is crucial to tourism development on account of certain special characteristics of the tourist industry. The tourist industry is characterised by seasonality, rapid changes in the market tastes and changes in the economic, political and social environment—both national and international. The extremely volatile character of tourism makes the need for planning doubly felt.

Planning of tourism must be qualified by the term 'integrated'. Integrated planning stands in contrast to sectoral or isolated planning. In the context of tourism it implies that tourism is treated not in isolation as a self-contained microcosm of hosts and guests but is considered as being, influenced by and influencing in its turn a variety of forces—exogenous and endogenous to the destination area where tourism is introduced. The forces being many and diverse in character demand to be treated by specialists representing various disciplines. A co-ordinated approach is the sine qua non of tourism planning. Integrated

tourism planning also involves an emphasis on local level planning, linking tourism to other social and economic sectors of policy making.

Integrated planning of tourism has been woefully neglected by the Government of India. Thus, although the figures for tourist arrivals have registered an impressive increase from 2,80,821 in 1970 to 1,305,000 in 1983 (excluding visitors from Pakistan and Bangladesh) and earnings in foreign-exchange from a mere 406 million rupees in 1970 to 8,310 million rupees in 1982, no stable policy on tourism has been framed over the years. More serious is the negligence evidenced by the fact that while so many hotels both in the luxury and non-luxury brackets have come up, both tourism and hoteliery have not been considered industries in terms of government definitions and are subject to high level taxes. It is high time that the government undertook a serious view of tourism and planning before linking the fate of our economically backward regions to the increase of free time and leisure in the industrial societies.

The first step involved in integrated planning of tourism does not begin with spelling out the goals and objectives of tourism development or the strategies involved in tourism promotion; it begins with the assessment of the need for tourism in our country and the role it plays in national development as well as the identification of alternative substitutes to the tourist industry, if any. The nature of planning itself must be spelt out in detail. Probaly, theraputic planning would be needed to save many of the existing resorts which have already reached a stage of decay. At the same time while planning for new resorts one should avoid the possibility of mourning over their decay after having spent our scarce resources on building up an adequate infrastructure for tourism.

Need for market research and demand assessment

The basic questions having been answered, the next step is to make an adequate market research and a realistic demand assessment. This is particularly challenging in tourism studies since tourism lends itself extremely vulnerable to events remotely concerned with the tourist trade. Thus, while the film 'Gandhi' gave a fillip to tourism, the post-assassination and election climate continues to affect the number of tourist arrivals negatively. Again, the extremely rapid changes in market tastes imply that that it is risky to have any fixed policy involving large capital investment. The low occupancy rates of our five star hotels speak for themselves about the changing trends in tourism in favour of low budget hutlike settlements, so common in Goa and elsewhere.

While an adequate market research is important for tourism planning, it is more crucial to arrive at a decision on the question whether we want to create new markets for existing products through proper advertising and promotion strategies or create new products for existing markets. A classic example of opening up of a new market to suit an existing product is provided in the case of Puri (Orissa) where a set of complex factors involving restricted population increase and lack of productive activities made it compelling to promote Puri as a beach resort while still retaining its importance as a pilgrim centre. However, the problem of finding a market which suits a product and vice versa is a knotty one and could be adequately dealt only by a careful sociological examination of the communities who are to play the hosts. Each society has its own value patterns which determine to a large extent the nature and degree of its resilience or adaptation to the tourist influx. The value patterns in their turn are a result of a complex set of historical, political, economic, socio-cultural and ecological factors. Sociologists need to explore these patterns and within a prognostic framework try to find out the possible impact of a certain form of tourism on a certain community. The involvement of sociologists in such intricate matters involving local processes clearly points out the failure of setting up of goals and objectives at the national level without a due consideration of the needs at the local level.

Integrated planning also demands a scientific appraisal of the carrying capacity of a destination area. Assessment of the carrying capacity—physical, biological and socio-psychological is a pre-condition to adequate fiscal and legislative policy involving issues of taxation, incentives for investment, building restrictions, zoning and height restrictions and so on.

Need for proper zoning

Adequate zoning regulations—both marine and land, play a very important role in tourism planning and the economists have as important a role to play in this field as the engineers, architects and environment experts. The need for proper zoning arises out of the need for "compatability planning" although other factors including aesthetic considerations may play a large role. Compatibility planning is a matter of putting the right number of people and non-conflicting uses in the same area that is naturally suited for those uses. In some cases, tourism proves compatible with other industries but this is quite rare. In those cases where tourism is not compatible with other economic activities, economists need to make an objective assessment of the long term value of opening tourism by overthrowing an existing economic activity. In many places the residents have realised the extreme vulnerability of the tourist trade to multiple forces beyond their control and have retained their traditional economic activity while giving tourism only a secondary importance. This is probably a wise decision. However, where governmental intervention has failed to provide adequate zoning regulations the simultaneous existence of traditional and new economic activity has proved to be conflicting, e.g.—in

Chilka (Orissa) where fishing and tourism do not go together without jeopardising the interests of each other due to inadequate water-surface zoning regulations. Inadequate regulations on land also prove equally conflicting especially when tourists make the same demands on the resident-oriented products as the natives.

Conflicts may also arise over matters relating to levels of controls over touristic enterprise. Integrated tourism planning with its emphasis on local level planning must safeguard provisions for local control over touristic enterprise. In many cases local control has been lost due to inadequate fiscal and training procedures. Where government loans could have given a new lease of life to our craftsmen and also open up a plethora of new jobs to the locals in the form of family-extended hotels and the like, the picture now is that of rapacious Mahajans and absentee owners of second homes and posh hotels while the hosts who actually run the show either pull rickshaws, carry luggage or even move aimlessly outside magnificent hotels ; the insides of which they could never enter except as waiters, durbans, aayas, and bartan-wallas.

Lastly, integrated planning of tourism also calls for experts on advertising who must project an image of a destination area only after reports from other specialists identify the needs, tastes and dislikes of the residents ; the physical and biological potentials of the land, etc., on one hand and the needs of the tourists on the other.

In short, tourism is a multicomposite activity and serves its purpose best when planning is done in a multidisciplinary fashion. Planning for tourism involves an integration of knowledge at the different levels of policy making and the enmeshing of tourism with other sectors of economic and social policy including health, housing, education etc.,—a task which is not only monumental in scope but challenging as well.

Integrated planning of tourism calls for an equally radical approach of planning at the grass-root level and involvement of traditional organisations in decision making as well as implementation of plans as witnessed in the case of Panchayats and land reforms. The involvement of local people in tourism does not merely guarantee the adoption of the need oriented programmes geared towards selfreliance but also opens up the possibility of preservation of culture and maintenance of the ecological balance which has become more and more fragile in recent times. More important, of course, is the fact that when people themselves give shape to a plan, the resolution of any conflict arising in the process is handled more effectively by them ; particularly when the activity is of a type which has to do with attitudes and value patterns rather than with technological know-how. It may seem paradoxical, that the importance of decision making and implementation of policies at the local level, is matched by an equally important need of the presence of national and supranational organisations, which should be objective and unbiased in their planning of tourism, which, besides being the single largest export item is also a peace movement of unprecedented dimensions. One must, however, be cautious that this seemingly harmless activity has potentially harmful seeds of destruction which could cause untold miseries to our delicate economic, socio-cultural and ecological structure if planning is not done in a scientific manner. □

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Energy conservation in transport sector can be achieved through restricting the size of growth of this sector. Rapid urbanization, industrialization and economic growth accompanied by with rising standard of living are mainly responsible for the growth of transport sector and particularly in the increase of passenger cars. The passenger car ownership can be restricted through developing efficient public transport system and increased occupancy rates alongwith better design of urban growth with energy-efficient transport modes. However, with the growth of high transport input industries like iron and steel, aluminium etc., increased freight traffic can neither be discouraged nor restricted. Under the circumstances there should be a gradual switch over to domestically available fuel-based transportation such as coal or primary electric powered freight systems.

Secondly, energy efficient forms of transportation should be encouraged and subsidised by the state. Simultaneously, efforts should be made for commissioning implements and designs to increase traffic flow in large cities. The use of aricrafts for short distances should be discouraged by all means and principles of operation research should be applied to the movement of freight to increase overall efficiency. Steps should be taken to discard energy inefficient automobiles. In the light of high petroleum cost, austerity in use of automobiles and check of unnecessary growth of transport system is imperative. Merely raising oil prices will not check the wasteful use of precious black fluid.

Domestic sector

India's domestic energy demand is conspicuous by predominant consumption of non-commercial fuels such as firewood and animal and vegetable waste. Rural India uses 1400 million tonnes of cowdung as domestic fuel annually. In view of extreme fertilizer shortages this practice should be discouraged through adoption of more efficient Gobar Gas Plants, which provide sufficient energy for domestic requirements as well as fertilizer. It is also estimated that 150 million tonnes of wood is used annually as domestic fuel. The size of firewood consumption is further increas-

ing due to shortages and rising prices of commercial fuels like kerosene, liquid petroleum gas and electricity. This has brought a serious ecological problem. To counter the danger of the country turning into desert, a policy of organized tree planting campaign should be embarked upon.

Use of commercial fuels in the domestic sector is more or less restricted to urban areas or affluent rural population. Electricity is generally demanded for lighting and for operating small electrical appliances such as radios, T. V., fan and refrigerators. It has been observed that the lower income group derives its fuel needs for lighting from kerosene. But as the income level rises there is a swift shift towards L.P.G. or electricity. Thus kerosene being transitional fuel, sufficient energy can be conserved by making an effort to bypass this stage and moving directly from fuelwood to gas or electricity at least in small cities and towns. Effort should be made to alter the existing appliances to ensure high degree of energy efficiency. In the field of lighting the use of fluorescent lamps should be encouraged as these are three times more efficient than the incandescent lamps. Considerable energy conservation can also be achieved through nationwide education programme and austerity, such as putting off lights, fans etc. when not needed. Alteration in basic architectural design will also go a long way in easing this problem to a considerable extent.

Another approach towards energy conservation could be to schedule energy prices in such a way that it will ensure optimum utilisation of existing energy resources without straining the system. Under-pricing electricity or oil only encourages wasteful consumption of energy. In this situation a carefully planned price hike will discourage undesirable consumption in different sectors of economy. In addition to reforms in energy pricing, other measures may be needed to secure conservation objectives, such as regulation of energy efficiency of major energy using appliances, rationing and in some cases subsidies to consumers for using energy saving equipments. But care must be taken to adopt these techniques without expanding the existing administrative machinery. Otherwise the gains of energy conservation would be swallowed by expanded bureaucratic machinery.

In the present state of scientific and technical knowledge, it would appear that India cannot be said to be sufficiently rich in energy resources. Even with fairly optimistic assumption of low population increase, the total requirement of commercial energy is expected to be nearly 2000 million tonnes coal replacement by the year 2000 A.D., compared to 200 MTCR in 1971-72. This would not be entirely beyond India's means but would require a whole range of strategies in planning and executing energy projects which will affect investment decisions in other priority sectors. The programme of utilization of energy resources, has, therefore, to be fully supported by a conscious policy of conservation which would not only ensure avoidance of waste but constant appraisal of resources, processes, techniques and choices in different regions and sectors of the economy.

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task involved and implementation. This programme, therefore, has to be taken up as a mass programme cutting across every sector of development and every section of the society, involving *inter alia* political parties, industry and commerce which employ illiterate workers, voluntary agencies, educated youths, village panchayats and community at large. A suitable mechanism for effective implementation of this strategy has to be worked out.

Sharing the burden

Since various development sectors are utilising the educated manpower produced by the educational institutions, it should be the primary responsibility of these departments to share financial and administrative burden involved in production of the required manpower. Suitable linkages with these departments and also the private sector engaged in these activities is, therefore, another vital issue for discussion to work out a suitable mechanism in this regard. This will help both in finding extra resources required for educational development and also for linking the educational system with national development which is so badly needed.

(*Continued from page* 14)

pitfalls of R&D in the country have now been identified and these new institutes are designed to avoid those pitfalls. When the UGC's specially gifted 100 students have matured into scientists, we will have seed material for thinking big in science's frontier areas like new materials on nuclear energy, biotechnology, electronics, satellite systems, etc. Much of course, will depend upon how they are selected. The whole set of initiatives now started will provide India with the high quality scientists that she needs to get into the 21st century as Prime Minister Rajiv Gandhi puts it, with its great promises in every field of human endeavour. □

(Courtesy : All India Radio)

Why rural industrialisation?

Dr. Arvind Kumar Mishra

In our villages, the majority lives below the poverty line and faces frequent unemployment. The capacity of agriculture to provide employment is saturated. The author emphasises that to reduce the inequalities of income and to improve the lot of rural folks there is an urgent need to develop faster village industries.

IT IS WELL KNOWN that even after 36 years of independence and over three decades of planned economic development, India remains predominantly a rural society with bulk of her huge population living in villages under conditions of grinding poverty. Mass unemployment and under employment, widespread illiteracy, use of primitive technology, low rates of savings and investment, gross interregional and intra-regional inequalities of incomes and wealth and mounting inflationary pressures still continue.

Our rural population may broadly be divided into two categories : land owners, consisting of people mostly belonging to higher castes and landless poor artisans belonging mostly to lower castes. The intensity of the problem of unemployment is comparatively greater in the latter category. Due to this problem a large section of our population is compelled either to live below subsistence level or to shift to big cities in search of employment.

Village industries

Agriculture cannot provide more employment. But planned and regulated development of village industries can provide additional employment opportunities, raise production and improve economic conditions in rural areas. Some of the village industries which may easily be encouraged in rural areas are hand pounding of paddy, oilseeds crushing (ghani), making of footwear, leather tanning, production of gur and khandsari, making paper, palm gur, soap and bee-keeping, poultry etc. Village industries are generally labour intensive.

Other similar industries which are not directly concerned with agriculture, but use rural resources and absorb mostly rural artisans also fall under the category of village industries. These may include spinning and weaving, handlooms, blacksmithy, cutlery, toy-making, rope-making, bamboo and cane works etc.

Their role

Our experience of about three decades of planned economic growth strengthens the case of village industries both from the points of view of reducing the inequalities and for attaining a satisfactory level of economic progress in rural sector. Large scale industries, have encouraged the concentration of economic power, incomes and wealth in the hands of industrialist elite. These industries have also led to disproportionate growth in large cities, giving rise to slums and have created problems of social tensions, exploitation and atmospheric pollution. The common man still remains deprived of a sense of partnership in these industries. One of the chief merits of village industries lies in the fact that they enable the common man to participate in industrial activity.

Another important role which the village industries can play is in the field of decentralisation of economic power and elimination of monopolistic exploitation. It cannot be denied that in key sectors, small scale industries are no substitute to large scale industries. But in the field of certain consumer goods, village and small scale industries may have a domi-

nant position. It is obvious that according to the Industrial policy resolution consumption goods industries fall under the purview of private sector. The village industries must be protected against any threat of competition by the large scale industries. By establishing industry in the remote corners of the country, village industries tend to mitigate economic inequalities and reduce the bad effects of modern industrialism.

Village industries can raise the income-generating capacity of rural economy by simplifying the distribution procedure. The check on undue growth of urbanisation exercised by the planned development of village industries can effectively curb the excessive concentration on economic power. By checking the concentrated production the predominance of middlemen and excessive pressure on transport system can be minimised. This obviously can reduce the cost of products to the consumers. Decentralized production through a network of well-knit village industries obviates the necessity of complicated managerial and competitive marketing techniques, thus reducing the costs on account of overheads.

The conditions of mass unemployment and under-employment, shortage of capital, widespread illiteracy and inflationary pressures also favour a relatively greater emphasis being placed on village industries. Their potential for large scale employment with the help of relatively small amount of capital is well established. In view of wide-spread illiteracy of rural population, simple and intermediate technology involved in village industries is particularly suited to our conditions. Again owing to the shorter gestation periods of village industries, they can play an effective role in arresting the mounting inflationary pressures on economy.

Their development

A great emphasis to develop the village industries has been given from second five year plan onwards through help and support in the form of loans at lower rate of interest, subsidies, technical and marketing knowhow, reservation of spheres of production as also through positive forms of assistance such as improvement of skill, better equipment, credit etc. An attempt has also been made to promote the development of small scale industries as ancillaries to large industries and to organise artisans and craftsman on cooperative lines. A phased programme of modernisation of machinery and equipment of some of the selected small and cottage industries is also under progress. As a result of these measures, substantial progress has been made in improving the quality of the products as well of many small scale industries.

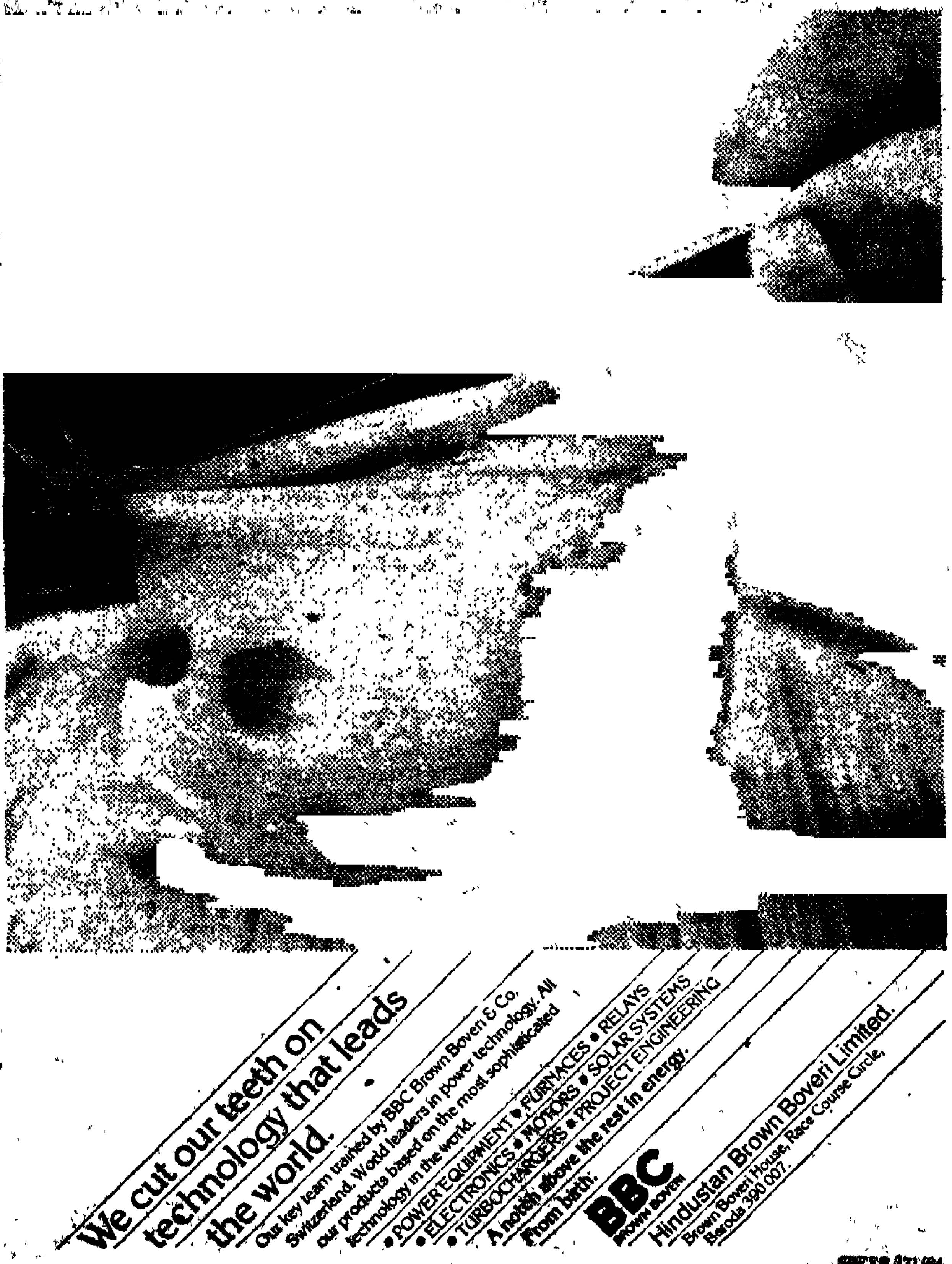
The foregoing analysis thus leads to the conclusions that the development of village industries on a planned basis can play an effective role in increasing production and economic wealth and giving a broader and stronger base to the rural economy. By utilizing larger human resources and reducing the concentration of economic power in few hands, it will improve the distribution system. But the reorganisation and development of village industries is not an easy task. Special care is required to strengthen the cooperative system in the country to take the charge of these industries.

Suggestions

Care should be taken to ensure that these industries are economically viable, i.e. they can start on their own and generate a surplus for future growth, that they keep their doors open to technological advancement and better organisational and management techniques and make the fullest use of market research to adjust themselves to the changing fashions and demands. Purely traditional types of cottage industries using primitive technology and unaware of the requirements of the fast changing society cannot be suitable in modern times.

The conditions for the fast development of village industries in India are much better today than ever before. The rural population has a large number of educated unemployed who have the potential of becoming entrepreneurs. With the better supply of electricity in rural areas, opening up of more branches by banks, and improvement in transport and communication facilities the development of village industries should not lag behind.

Lastly, the programme for development of village industries should be launched like a mass movement. We have to make the efforts to carry the message of development to every door and enthuse the rural masses to participate in it. The village industries should form an integral part of the overall rural economy which means their production pattern should be strictly correlated with the area of their operation. □


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TOWARDS SOCIAL REVOLUTION
a Case for Economic Democracy
VASANT SATHE

A Serialisation 16

The alternative
(continued)

Whenever popular pressure through unrest develops in developing countries, it finds expression in outbursts which take altogether unpredictable forms, essentially non-economic in character. When such eruptions take place, eroding the civilian authority, this gives an opportunity to the military, which alone has the sanction of the gun, to intervene and take over the administration. In fact, this has been the story in most of the developing countries where one democracy after another has succumbed to military dictatorships only because they could not evolve an economic system which would ensure freedom and growth to its people. There are no soft options as Gunnar Myrdal has said. Also, there are no half-hearted solutions. There is no economic wizardry which could ensure the growth of exploitative vested interests and, at the same time, assure a balanced and equitable growth for the entire people. But at least, when the need for a transformation of the system is felt imperative, it must be said so outright and categorically as suggested by Raul Prebisch in the following words:

> What happens, however, is that those who are proposing to eradicate poverty generally put forward their formula without explicitly stating how it is to be applied. Is there to be a simple and direct redistribution ? Could the problem of social equity be resolved without affecting the system ? It is understandable that this my be feasible in countries where over a long period of time a great deal of capital has been accumulated, while poverty, in contrast, exists on a relatively small scale. But in the peripheral countries where conditions in this respect are strikingly different, it is unwarrantable to shirk the necessity of raising the rate of accumulation as rapidly as possible. And we have already seen that beyond a certain limit this is not compatible with the dynamics of the privileged consumer society. If, on the contrary, the proposal is that distribution should be dynamic, if the need for a transformation of the system is recognised, it will be necessary to say so and to say so outright. And this does not appear to be the case.

Democracies must accept national economic discipline of balanced growth and that can be done only if there is an inbuilt provision for the entire people to participate at every level of the economic activity, both in the productive and the distributive fields. Democracy, to be real both in the political and the economic sense, has to be participatory democracy, where the whole system and structure are really of the people by the people and for the people. This is the object that our thesis tries to achieve, but as said earlier, although initiative and leadership to attain it can be given, and have to be given by the ruling party, which fortunately commands the sanction of the people throughout the country and which is blessed by a leadership that enjoys the affection and confidence of the people, yet this cannot be done by one particular party unless all political forces actually accept the concept of economic democracy by way of a consensus.

It is here that a dialogue becomes necessary and I sincerely hope that this thesis may prove a basis for such a dialogue. Many more details of a whole complex economic system would indeed have to be worked out and all that cannot be done by one person. But I have at least attempted to suggest and provide a model of a framework for a system which can not only preserve democracy but also strengthen it and ensure its continuance by affording economic and social justice to the entire people.

Under the system of participatory economic democracy, the working people would be the real partners

having an equal share and voice in the management through their elected representatives and all results would be known to them. Hence, there would be no question of strikes or stoppage of work. Profit sharing would be based on overall consideration of the funds required for factors such as expansion and research and development, and it would not be possible for one section to exploit another.

Also, it would not be possible for a few individuals, however intelligent and capable they may be, to get a highly uneven share in the gains either in the form of remuneration or return on investment. Although an entrepreneur or a scientist or technologist or managerial expert would be given a substantially higher remuneration to afford a comfortable and decent living, there would be no scope for accumulating large capital and properties in the hands of few individual owners.

Today, life has become so self-contradictory that one can only feel amused at the mockery which goes on behind the facade of eliminating corruption; everyone accusing every one else of the lack of values and morals. And the trend continues despite the fact that everyone of consequence is aware that, in varying degrees, he is equally affected by the virus of corruption. In fact, his real complaint is that when this is such a welcome disease, why is he not having more of it !

Today, on an average, any industrialist or businessman is willing to spend about 1 to 3 per cent on what is known as legitimate expenditure for securing the contract or licence. This percentage varies (and can increase) from case to case, according to the profitability of the venture. This amount is not accounted for and when it is in the form of black money, the more is the reason why it cannot be accounted for. This is used mostly through middlemen or liaison men. It is easy to understand what a devastating effect such money can have

Today, the value of a house in a posh locality in Delhi is around Rs. 5 lakhs or more. One two-bedroom flat would cost about Rs. 2 lakhs. Now can a civil servant retiring with a pension even of Rs. 1000 per month, who could have saved at the most a couple of lakhs, afford to build such a house Consider the fact that the rupee has got devalued to 20 per cent, which means that those who have affixed income from a salary even of Rs. 4000 month, have a purchasing power provided by only Rs 1000 twenty years before. However, bank savings have not appreciated in the same ratio as the devaluation has taken place.

Hence, a high court judge or a secretary or a general in the army getting Rs. 3000 per month in 1947 and getting the same amount today means that he is, in fact been paid less than Rs. 1000 per month in terms of real purchasing power! And yet, he is expected to maintain the same high standards as before. A most common item in respect of status and, now even a necessity, is a car. Even with a salary of Rs. 2000 in 1947, one could afford a car costing Rs. 10,000 to Rs. 15,000. But with Rs. 2000 becoming Rs. 500 in real terms, who can afford to buy a car costing Rs. 75,000 ?

Then, another very important item of additional cost is the cost of the education of children. If a child is to be assured of a bright future, the best education is now given in public schools whose products are preferred in competitive recruitment. The fees could be anything between Rs. 200 and Rs. 300 per month per child. Further, the system of gradation by allotting marks has now become a farce, because even with 80 per cent marks a student generally cannot get admission to medical or engineering courses, admissions have closed at 92 per cent ! Some students get even more than 100 per cent !

While we in India most idealistically want our young men to go to villages and inaccessible areas with a missionary zeal and to set up industries and medical practice there, when it comes to our own kith and kin, we want them to get lucrative jobs in foreign countries, e.g. the USA or the UK, or at least, in the metropolitan cities of India. How is it that people with money and power are able to get away with this ? Do we not know ? In short, we are all mired deep in the quick-sand of frustration and indifference. All efforts to cure this malady by a symptomatic treatment would prove futile. Making some individuals scapegoats in an apparent move to improve things would only prove superficial and deep down things would continue to deteriorate ?

True, there would be no real revolution on economic grounds. The powerful vested interests which have acquired large properties and assets have nothing to fear from other elements. Generally, such persons are not really affected by linguistic or regional or even communal upheavals. It is the poor who suffer.

Then again, there are some who feel that it does not matter if the country gets bulkanised or divided, if military rule comes, no harm. It is easy to deal with one dictator and a few officials. The civil service also would not be affected. Instead of serving the political nitwits, they could switch over to serving equally dumb military generals. The main task would be to retain the power of the vested interests and the blackmoney generating class and systems without which the real earning and opportunities of progress of even the civil service class would be lost.

The real stake in political democracy should, in fact, rest with those political forces and citizens who value democratic freedom and democratic rights. But, it is rather unfortunate that politicians at the national level are not willing to see beyond their immediate power interests and thus are losing credibility, and new forces at regional levels are emerging, threatening the entire concept of Indian nationhood.

A few suggestions to change the national economic scene, with a view to making it growth-oriented, involving the maximum numbers of the working force in the country in productive activity, could be summed up as under :

Organisational restructuring

(1) The entire economic activity, both in the productive sphere as well as the distributive sphere, should be brought under a common pattern of one single national sector doing away with the dichotomy of public and private sector in the organised area of economic activity.

(2) There should be a national marketing organisation as a federal body incorporating all marketing national organisations for respective trades, such as foodgrains, drugs and medicines, electronic and electrical gadgets and mechanical gadgets.

(3) Industrial activities in different spheres should be organised under a national organisation relating to that industry. There should be an apex organisation of all such national industrial organisations as a federation to ensure coordination of industrial policies in the respective industries.

(4) The pattern of all these organisations should be based on tripartite management consisting of representatives of the entrepreneur, labour and the financing institution in equal proportions.

(5) It shall be the primary duty of the national organisations so constituted to ensure proper fixed ratio of prices in collaboration with the marketing organisations so as to achieve a fair parity between the prices of the raw materials as well as the finished goods. Efforts should always be made to reduce the costs by adopting an economy of scale and by encouraging ancillarisation on a small-scale basis, particularly in the rural areas.

(6) The most important responsibility of the national marketing and industrial organisations should be to ensure the supply of raw materials, the production of standard goods and their marketing particularly of goods produced in the self-employed cottage or small-scale sector

(7) Another equally important feature of the new system is that every industrial unit would be mandatorily required to provide housing facilities to all its employees. The same would apply to the trading bodies. Such a measure would help in the eradication of slums. The housing activity thus generated could itself be a major industrial activity, employing a substantial working force.

Strengthening the infrastructure

(1) All industrial undertakings, whether started in the public sector with public investment or in any other sector, should be managed by experts in that field and should have a tripartite participatory structure.

(2) The main job of the government should be to create infrastructural facilities such as health services, schools, social amenities, communications and transport in the industrially backward areas.

(3) There should be close link between the various educational institutions such as universities and technical institutions on the one hand and the industries on the other so as to ensure the availability of duly trained manpower and their assured absorption.

(4) The maximum effort should be made to establish servicing centres at the lowest block levels to provide efficient servicing and maintenance facilities to the agriculturist and to all agro-service units. These units should be closely linked with the marketing organisations.

(5) Every major industrial sector would be required to have its own research unit and, collectively, the entire national sector of industry as well as trade would have to invest at least one per cent of the GNP in the sphere of research, both basic and applied, in science and technology.

(6) Greater emphasis should be placed on the generation of energy, both renewable and non-renewable and industrial units either collectively or individually, should be encouraged to have captive power plants. Whenever new power-generating plants are set up, a percentage of power should be reserved for the industrial sector.

(7) The concept of insurance should be extended to the agricultural field so as to cover crops as well as agro-industrial units and their produce. Agriculture should be treated as an industry and same norms of the cost-benefit ratio and pricing should be applied to agricultural produce.

(8) Special attention should be given to the protection of the environment and the maintenance of the ecological balance in all industrial and agriculture activity. The preservation of forests and natural habitat for wild animals would also be given due attention.

(9) Along with the growth of the agricultural sector, special attention should be given to the development of fodder lands and the production of better fodder for cattle. There should be a national plan for the growth of dairy products. The maximum number of people in the rural areas should be provided with facilities to maintain milching cattle; piggery and poultry should become additional sources of income and supply of protein diet. Further, the slaughter of useful cattle should be prevented.

(10) Similarly, greater emphasis should be placed on the development of inland fisheries as well as deep-sea fishing.

(11) Due encouragement through the national marketing organisation and other industrial organisations should be given to the production of traditional handicrafts, to both develop their export potential and ensure the indigenous growth of handicraft products.

Planning strategy

(1) The entire concept of national planning should be to achieve the maximum utilisation of both the manpower resources and the raw material resources so as to provide the maximum remunerative and productive employment opportunities to the working force, particularly among the younger generation throughout the country. This should be done by mobilising national industrial as well as marketing organisations to achieve a maximum balanced growth rate.

(2) The economic structure should have an inbuilt mechanism to prevent the accumulation of the surplus or capital in the hands of a few individuals.

(3) Individual earnings should not be taxed beyond 50 per cent of the net earnings and all properties accumulated beyond a certain level of earnings should be socialised.

(4) An effort should be made to achieve a 1 : 10 ratio with respect to individual earnings in the country

(5) While the production of goods and services is generated on a total national basis, the prices of certain fundamental requirements such as food and clothing, transport, housing medicine and education would be deliberately kept low by being subsidised. Once this is done, there would be no need for individuals, howsoever highly placed, to possess personal wealth or properties which would be of an ostentatious nature and which would increase the gap between the rich and the poor. A sense of national patriotic austerity and avoidance of extravagance would have to be generated and made to prevail on the entire national economic scene.

Fiscal incentives

(1) In allowing foreign investment with technology, the consideration should be that on any such investment made, there would be no indigenous capital input unless the industry comes in the priority sector.

(2) However, on investment made from outside, no rupee earning should be allowed to be repatriated. Repatriation shall be allowed only out of a net export earning or saving of foreign exchange to the maximum extent of 30 per cent

(3) On the foregoing understanding, no constraint should be placed on foreign investment.

(4) To encourage the establishment of industries in the 'no industry' regions or in the industrially backward regions, a moratorium for three years could be placed by giving an assurance that for these industries, the source of investment would not be questioned. In addition, five-year tax holiday could be given to the industries set up in such regions to be effective from the date the industry starts functioning.

(5) Governmental organisations, being the largest buyers of consumer goods and articles, should give preference to the goods produced in the small-scale sector.

(6) Financing institutions working in close coordination with national industrial and marketing organisations should provide adequate financing to the small agriculturist land-holders as well as to the small-scale industries, cottage industries sector, ensuring the supply of finance more in the form of inputs rather than cash and linking it to the marketing of the products so as to ensure an adequate return on investment.

Role of workers and their development

(1) With the working class getting a direct participatory share in the management as well as in the return, the whole concept of trade unionism would undergo a basic change. The role of an association of employees under the new system would be to promote welfare activities which would improve the quality of life of this class.

(2) Under this system of economic democracy, the maximum scope should be given to all citizens to engage themselves in creative and innovative activities in the productive and distributive spheres as well as in the cultural and educational fields, which would be patronised by various industrial organisations, individually as well as collectively.

(3) All industrial organisations should place special emphasis on the encouragement of sports and should employ sportsmen as an independent part of their activities.

(4) As stated earlier, one of the most important aspects of the new system is that every industrial unit would be mandatorily required to provide housing facilities to all its employees. The same would apply to the trading bodies. Such a measure would help in the eradication of slums. The housing activity thus generated could itself be a major industrial activity, employing a substantial working force.

(5) As the function of government would be restricted mainly to policy formulation and monitoring, a substantial staff would be dispersed over various industrial and trading sectors.

Politico-social re-orientation

(1) In the democratic set-up at the national level efforts should be made to encourage the formation and establishment of, at the most, two major political parties. Political parties should be provided enough facilities to build up their own funds and sources of revenues, recognised by law, and should be provided adequate election, expenses from the national exchequer

(2) Anti-national and anti-social activities such as smuggling hoarding and blackmarketing should be firmly put down primarily by the national industrial and trading organisations themselves. The duty of the government as the custodian of law and order should be mainly to ensure expenditious trials and punishment to all found guilty of such activities Summary trial procedures in people's courts should be evolved to tackle such cases.

(3) The whole educational system should be geared to training young persons to become productive and useful members of society with assured employment opportunities. Consequently, the entire atmosphere in the universities and educational institutions would undergo a substantial change. Students' organisations also would be involved in the management of educational institutions; and youth being given adequate opportunities for the development of their personalities in different sphere of life, they would inculcate a sense of self-discipline so as to eschew indiscipline and violent behaviour.

(4) Efforts should be made to involve the youth in national projects such as housing, road-building, communications, river grid construction, canal construction and agro-service centres so that they become a part of the nation-building movement For instance, national youth movement in the name of Jawaharlal Nehru could be set up.

(5) Special emphasis would be placed on the development of our arts and ancient culture with particular attention being paid to the rejuvenation of traditional classical and folk arts by training and encouraging young performers throughout the country

All these suggestions would help the country become not only the largest political democracy but also the largest economic democracy, at least in the developing world. As we progress under the new pattern and as more surplus is generated faster through the productive and distributive activity, more avenues of growth will emerge, enriching the life of the whole people of the country

If we really have to achieve the results that would effectively improve the lives of our poor teeming millions, we would have to take effective decisions on major projects to restore the environmental and ecological balance and the provision of irrigation to 40 per cent more arable land. Consequently, the entire agricultural life pattern would have to be transformed into an agro-industrial one and all criteria of industry would have to be applied to agriculture. If this is done, the annual rate of growth of GNP can increase by at least 10 to 15 per cent a year and not by 2 per cent to 3 per cent as at present. But to do this, we would have to firmly persuade the vested interests to curb their lust for possessing extravagant luxuries Naturally there would be strong and shrewd resistance by the vested interests primarily in the political field. But the more dangerous resistance would be offered by the entrenched administrative system and the industrial sharks who thrive at present.

Actually, there are no soft options. The model of economic democracy suggested here promises to bring about an economic revolution in a peaceful and democratic manner. What is being suggested is no miracle All that the thesis proposes is the truly equitable, equal and honest participation of the important economic sectors in both the productive and distributive activity at every level.

The structural change envisaged would, as a natural corollary, necessitate changes in the education system and other fields such as health and hygiene

In effect, the change in the entire life pattern would be total and holistic and would bring about an enthusiastic involvement of the entire population, more particularly the younger generation in the development effort

For the success of our model, it is imperative that it must not be attempted in a half-heared manner which some people may indeed want to do. For, if the involvement of all productive sectors is not total and genuine, the entire concept would fail and the effort would become counter-productive. Hence, I would not mind people discussing the concept of economic democracy and the model proposed and even suggest improvements which would fulfil the objectives and strengthen the idea. But having discussed and decided, then the proposals must be implemented as thoroughly as an architectural design.

I once again repeat that in the existing system the exploitative elements have a stake in keeping the majority of our people poor The pragmatists, whether politicians, economists, administrators or businessmen, may shed tears at the suffering of the people. But they all maintain the realistic view in their decision-making processes that, after all, because of fiscal compulsions and resource constraints, their own priorities in different areas should gain fair ascendancy, and they can only try and do their best under the 20 point programme to raise the maximum number of people above the poverty line

The most glaring example, if one were needed, is of the people employed in the building of houses No one ever bothers about where and how they stay, in rain, cold or heat, and from where they are brought. Such neglect compels them to become slum-dwellers. But even the notion of spending a small amount for the eradication of slums and the provision of better facilities to slum-dwellers is considered uneconomic by those who prepare the cost estimate of such projects.

The present distortions in the economy are due to the establishment of highly consumerist section of society While the vast majority of people is exploited, the unaccounted and accounted wealth in the hands of a few is spent in a highly ostentatious manner as

part of what is today called the five-star culture. It is as a result of this culture that ordinary food, which in terms of its calorific content and quality should cost Rs. 10 to Rs. 20, is priced at about Rs. 100 (the same ratio also applies to other currencies) and where a room which basically provides a bed and a toilet cost Rs 300 to Rs 500 per day. In the present-day society individuals not only want to spend on marble tiles and other expensive fixtures but want to have private swimming pools, golf courses and tennis court in their mansions, where, because of the constant movement in their life, they are hardly able to stay for a few days in a year. Yet, all this individual extravagance is allowed to prevail as a status symbol, is even eulogised and glorified through the media and ultimately recognised, honoured and protected by the state, it is this vulgar possession, display and expenditure of wealth by the few that would be totally eliminated in the pattern of economic democracy propagated here. The whole system of marketing as well as demand and supply would be so organised as to first meet the basic needs by way of proper distributive justice which would be in-built as the price mechanism formulated by periodical internal dialogue between the representatives of the producers, consumer and traders. The idea is that the people involved in the productive or distributive activities themselves must interact with these representatives of the general consumers who are represented through the elected representatives on the political side, and while a fair return is given to each sector, the larger interests of the society as a whole are always kept paramount.

Although every member of society would be assured of a fair return, and, once having got it, the full right to spend it, he, all the same, must be held accountable if he acquired wealth beyond his income and would have to disclose the source of his acquisition or investment. It is common knowledge that most of the investment by people who earn huge incomes is made in real estate or in industrial or trading ventures. The cost of all such investment is easy to ascertain considering factors such as the quality of the material used for building and the cost of a particular building in terms of square footage, depending on the area and the location.

Hence, once the structure proposed comes into being, no one would be allowed the benefit or privilege of exploiting and cheating other members of society, and it would indeed be impossible for a few persons to acquire or amass disproportionate exploitative wealth. Today, such acquisition is posible because fundamentally, those who are at the helm of political, economic and social affairs in the country are, in fact, acquiescing, if not sincerely believing, in the existence of an exploitative structure of the economy Indeed, some of them have now become a party to the vested interests. Not only are they unwilling to change the structure, but they have, in a manner, become slaves to the structure and are incapable of either getting out of it or demolishing it The lure of easy money and the captivating influence of money power are not new phenomena. The only difference is that the quantum of unaccounted wealth amassed in the hands of a few has become so large in some of the developing countries such as India that its poisonous and deleterious effect has now spread over the entire bloodstream, at least, at all decision-making levels and points of authority and has thus brought about a sort of atrophy in the entire process of balanced growth.

The model of economic democracy in which all productive and distributive forces participate to an equal measure at every level of production and distribution and in mutual cooperation aims at the establishment and the growth of an egalitarian democratic society. We know that the development of such a model is easier said than done. We know how powerful the vested interests are and what excuses they can offer and how, in the name of realism and pragmatism, they would want to move slowly and carefully so that no substantial and desirable change really takes place to affect their exploitative tactics But we also know that the growth of a small island of prosperity, which rises vertically as the ocean of poverty and unemployment builds up on the periphery, cannot last long.

(Next issue : The alternative (Continued))

HUDCO clears 97 housing projects

NINETY SEVEN NEW housing projects worth Rs. 57.63 crores have been sanctioned by Housing and Urban Development Corporation (HUDCO) These are spread over 11 States and cover 49 cities, towns and several villages. The States which have got these projects include : Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, Orissa and Tamil Nadu. The housing schemes will primarily benefit the economically weaker sections (CWS) and low income group (LIG) families whose monthly family income does not exceed Rs. 600.

HUDCO will grant loans worth Rs 36.42 crores for these housing schemes Over 56 thousand families will get houses after completion of these projects. The money sanctioned by HUDCO will also provide for development of 394 plots and 2,326 basic sanitation facilities.

With the above new sanctions, HUDCO's operations now extend to over 660 cities and towns and thousands of villages in 20 States and five Union Territories. The loan sanctions total over Rs. 1,757 crores with project cost of over Rs. 2,400 crores. This will enable construction of about two million houses, development of about two lakh plots and improved basic sanitation facilities for a lakh of families.

Drought and water management

Sreelekha Basu

Average annual quantifiable monetary losses suffered due to drought have been estimated at Rs. 2,000 crore. Our water management system must use the up-to-date management tools and techniques for analysing various management situations and aid decision making. The author, in this concluding part, emphasises that we cannot afford to stay behind in this crucial area.

IN INDIA, we have to live with flood and drought. About one third of our country is drought-prone. The Central Government has been spending about Rs. 200 crores per year on drought relief. The average annual quantifiable monetary losses suffered due to droughts have been estimated at Rs. 2000 crore.

Drought is caused by water scarcity. Different criteria are being followed for identification of drought in India. Most of these are based on inadequate rainfall. Rainfall is taken as the main parameter in the identification of drought. Meteorological drought is defined as significant deficiency of rainfall from the normal, while agricultural drought occurs when there is a prolonged moisture deficiency. Hydrological drought is defined as a marked depletion of surface water and consequent drying up of tanks, ponds, reservoirs, etc. as also significant fall in the ground water level.

Economic drought is defined as a situation when production falls below expectation. In India the drought occurance is usually taken as large scale fluctuations and variations in rainfall, both in quantum and time. If there is a prolonged dryspell, soil moisture reserves get depleted and become completely inadequate to support any plant growth. Dryspells or scanty rainfall are occassionally not helpful even to meet the evapotranspiration requirements of crops. Imbalance between soil moisture and crop requirements of water, resulting from scanty rainfall or its erratic distribution (over time and space), is viewed as drought condition and from this angle some 96 districts in India should be classified as drought prone.

Identification

The Central Water Commission has been engaged in the studies suggested by Dr. K. L. Rao and other expert groups. One such follow-up study has been indepth investigations for identification of drought prone areas in the drought districts of India. All the 96 drought identification reports have been finalised. Problems of drought in all aspects have been examined. The various contributing factors such as temperature, climate, soil conditions, landuse pattern, surface and ground water resources, population in the region, etc. have been taken into account, in addition to the rainfall and its erratic distribution. The objectives of this series of investigations were identification of drought areas keeping in view the socio-economic conditions, meteorological, agricultural and other physical factors, and to evolve a suitable strategy to reduce the severity of drought conditions in the areas. The various factors responsible for drought conditions and the repercussions of the same on the people and production of drought prone areas, were analysed to assess the serverity of drought and the effects of water deficits.

Rainfall is taken as the most important parameter of the investigation and it was computer analysed in greater depth to draw conclusions about its various characteristics and contribution to drought. Depend-

able estimates of water deficits were obtained, keeping in view the availability of water from surface and ground resources, and water uses for various purposes viz. Agriculture and Irrigation, Domestic and Industrial and others.

An attempt was also made to project the demand of water by 2001 A.D. and 2025 A.D. For irrigation demand, the criteria laid down by Irrigation Commission (1972) and National Commission on Agriculture (1976), in respect of providing minimum irrigation facilities in drought prone areas, were considered. Demands of water under various other alternatives (like Master Plans of State Govts. proposal to bring 40 per cent of the future gross cropped areas under irrigation and proposals to provide irrigation to the entire gross cropped area), were also estimated. Wherever sufficient gauge and discharge data were not available (along with their utilisation statistics), the surface yields were assessed by Water Balance Method (Thornwaite and Mathur), with 50 per cent dependability. Details on ground water potential and recharge were obtained from the CGWB and State Ground Water Deptts.

While compiling total availability, water resources already committed for use and obtained from outside the area, were also taken into account. Water balances were at 75 per cent dependability. Detailed studies were undertaken on the number of drought years, their severity, etc. by the "aridity index" method, considering frequency of failure of rainfall. The State Governments mostly identify an area as drought affected if the crop production in that area was less than 50 per cent of the normal, which was the average yield of last ten years. This is known as the Annawary method of identification of drought, where the assessment is made by visual inspection of the field staff. Usually revenue remission is granted on this assessment Annawary estimates were also studied in the investigation reports.

Water conservation

An all out efforts have been initiated to identify water-scarcity areas in the country and examine the feasibility of water conservation in surplus areas for transfer to the drought-prone areas. Some specific schemes have also been taken up to implement water transfer proposals by link-channels etc. However, there are practical difficulties in the implementation of such large and inter-State scheme and the present policy of the Government is to encourage dryland farming for raising productivity in semi-arid and dry regions, so that the risk to farmers is cut down to the minimum.

Creation of micro-watersheds and effective water managements have been suggested, with special attention to crops with non-intensive water requirements like coarse cereals, oil-seeds, pulses, etc. The Seventh Plan approach paper discourages fresh major projects in the irrigation sector but suggests a strategy of new starts of medium projects only in the drought prone areas and in tribal and backward areas, and minor irrigation schemes all over. As almost all over 96 drought prone districts are less developed, poverty-ridden and backward, and as the Seventh Plan is expected to accelerate the growth of food production, the necessary infrastructure (such as drainage, field channels, link-channels and watersheds) would be created to attend to the water requirements of our drought prone areas.

The role of water resources in the development of our economy, in poverty alleviation and in human welfare in general has been well recognised. Drought and floods are the major water related problems, which cause havoc and disaster every year and result in some 2500 to 3000 crore of rupees of damage to the country. Though we do not have famines now and measure undertaken for flood contention have to a certain extent helped, yet these chronic problems are still with us as serious constraints in the progress of our economy. The Seventh Plan approach paper suggests preparation of basin-wise master plans to decide priorities of projects in water conservation and its beneficial use. Intensification of R and D for irrigation, drought and flood control and for ensuring equitable distribution of water in water scarcity areas have been stressed.

Application of remote sense data bases, use of advanced methods of communication (telemetering devices, radar, etc.), preparation of long range comprehensive master plans for irrigation as well as flood control works, control of water-logging and salinity and evolution of region specific water management and water utilisation practices have been recommended The defects and drawbacks which have come to light in the implementation of better water management have to be remedied with the help of a sound data base efficient data communication system, and through research education and training relevant to water resource development and control of drought and floods Success will depend mainly on human factor. Our water management system must use the uptodate management tools and techniques for analysing various management situations and aid decision making. We cannot afford to stay behind in this crucial area which is the key to our accelerated growth and self-sufficiency (concluded). □

For their better tomorrow!

Youth, the longest moment in life, is the time to dream. But, as things are, few among the youth can afford to dream, for so overwhelming are the harsh realities and hostile environs they face. If today's world is yesterday's dream, let them get a chance to dream for the future of mankind.

The year 1985 *has been dedicated to discussions, debates and indepth studies on the problems of youth so that in the years to come, they may fare better and may even dream.*

ORWELLIAN YEAR IS OUT and the International Year of the Youth, 1985, with its tried theme of Participation, Development and Peace is very much in. The year is still very young and by the time it grows old and we ring it out, much attention will have been focused on the young during 12 months of lively debate. Hopefully, at some future point in time, social change and legislation could emerge as a result.

Visible and "invisible" at the same time, youth permeate developing nation's economies In households, farms, factories and elsewhere, work is one of the responsibilities of youth and they are taking an increasing share of the work. Young people throughout the world, in the developing world particularly, constitute an important part of the labour force.

Where labour-intensive production characterises all economic sectors, teenagers and young adults are a major source of labour. They are working now; they will be working more in future.

Yet, youth in the developing world faces high unemployment, low standards of living and wide disparities in wealth and opportunities, because the economic contributions of youth tend to be 'invisible' and hence uncounted, unvalued, unplanned and unacknowledged. It makes effective and efficient integration of their effort into economic development difficult. Development programmes and policies integrated with the specific needs and conditions of the youth are few indeed.

Who are the Young ?

In the developing world, some 70 crore people (20 per cent) are between the ages of 15 and 24 and some 140 crores are under 15. Against this in developed countries, the percentage of under 15 is very low and it is shrinking fast. Accepted international definition of 'youth' is persons aged 15—24; in practice it is any where between 10—30. Some are forced out of the family umbrella at the age of 10 while some continue to be totally dependent on their families even at the age of 30.

Development process neglects youth mostly because they have no proper knowledge of what they are doing; of their capabilities and of the impact of development on them. Moreover, as younger children are born, the older ones usually are ignored.

The kind of work youth is engaged in is conducive to its neglect in the development process, because they are most often found in unskilled or low paid jobs and they are easily replaceable. Their work is intermittent in casual or secondary labour markets and at unstructured worksites Only when there is gross abuse and exploitation, child protection issues arise.

Even though it is asumed that those under 15 are at school, the reality is quite different. And as it is taken for granted that they are all at school. their labour is not looked upon as an economic resource.

In spite of the spread of basic education, not all rural children, particularly girls, attend school at primary or secondary level "Complete" school is far lesser. Improvement in education and training is a must for increase in productivity and quality of the workforce Efforts are afoot to coordinate school schedules with work schedules, to initiate appropriate curriculae, to bring fees and uniforms within universal reach and to make training relevant to the existing labour markets Linking health and nutrition with education and training is also receiving world-wide attention.

Since young persons appear to be an abundant resource, they may be perceived to be without economic value But when they are unemployed under-employed or uneducated, it leads to substantial loss of human resources. Only a sustained systematic and organised effort can make them a really visible force in the development process

Women and children

Women and children account for upto 80 per cent of the developing world's population As women are, so are the children If women are educated they have fewer children If women are healthy, they produce healthy children If women value female children as much as they value male children there will be more equity As far as the problems faced by women and youth in being integrated into the development process, they too are the same Their work on the farm or off-farm, seasonal or full time needs to be duly taken into account by development planners Better data and clearer definition of the roles of both are also required It must not be forgotten that women often work with their children in the factory, in home production and on the market Children are economic assets, in some cases as early as at the age of three and hence the case for large families in most developing countries A development fram work that embraces women and youth in farm family and in the labour market is urgently called for

Suggestions for the year

Incorporation of the concerns of women and youth into development efforts calls for the formulation of a new corps of committed scholars and practitioners Another requirement is an accurate and expanding information base which includes their economic roles, differentiated by their sex, age, area, family status income, education etc. Development impact on youth and women such as happens when young persons free their parents to go to the market to sell produce and the result of obtained education on youth in relation to present and future productivity have to be extensively studied Projects and policies which deal directly with the productive potential of women and youth have to be formulated urgently Training of techniques dovetailed to the available resource mix emphasising human oriented technologies instead of mere labour-saving devices should be made available to the managers Teaching should incorporate youth and women and "Youth in Development" could become a part of the sub-discipline "Women in Development".

The year 1985, as the International Year of the Youth and the end of the UN Decade for Women, is an appropriate time to merge the overwhelming common interests of women and youth □

Indira Gandhi Rashtriya Uran Akademi

THE GOVERNMENT OF INDIA has decided to establish an 'Indira Gandhi Rashtriya Uran Akademi' at Fursatganj in Uttar Pradesh. The project is estimated to cost Rs 6.60 crores with a foreign exchange component of Rs 3.30 crores

The Akademi is being set-up having regard to the imperative need for improving professional training in flying in India to international standards. The Akademi will be well-equipped centre of excellence to provide training for commercial pilots licence with instrument rating It will also impart training to Flying Instructors conduct refresher courses for the State Government Pilots, Commercial Pilot Licence holders and provide familiarisation flying training for departmental officers

The 'Indira Gandhi Rashtriya Uran Akademi' will be an autonomous body registered under the Societies Registration Act It will be administered by an autonomous Governing Council headed by the Secretary, Tourism and Civil Aviation under the overall administrative and budgetary control of the Ministry of Tourism and Civil Aviation.□

Marandi's wonderland

TALE OF A BOY from the wild hills, and one belonging to a Scheduled Tribe at that, making it good in the cut-throat world of competitive business has overtones of Alice and Cinderella rolled into one Yet Nimal Marandi did just that

Aged about 30 years, he hails from a landless tribal family of Takatpur under Baripada Panchayat Samiti His father, a daily wages labourer with a large family to support could not afford to give him any institutional education In his attempts to eke out a living, Nimal landed in a private garage at Baripada as a helper On acquiring proficiency in electrical fittings and repairs, particularly in automobiles, he got a job in an automobile firm at a monthly salary of Rs 210 He served there for five years

Now he is the proud owner of an Auto Electrical-Workshop' at Baripada in district of Mayurbhanj, Orissa

When he started thinking in terms of having an Auto-Electrical repair shop of his own finance was his main obstacle The District Administration selected him as one of the beneficiaries under ITDA schemes The Canara Bank Baripada sanctioned him a loan of Rs 2000 with 50 per cent subsidy With this amount in hand he purchased a coil testing machine, a battery charger and other essential tools to start his own Auto-Electrical repair shop at Tulas Chaura, Baripada Since then he has not looked back □

Indian garments popular abroad

PROVISIONAL FIGURES FOR EXPORT of apparel during the calendar year 1984 indicate an increase by 32.89 per cent over the previous year. Apparel items valued at Rs. 850.69 crore were exported during January-December, 1984, as against a figure of Rs. 640.13 crore during 1983. In quantity terms as well, 2308 lakhs pieces were exported during 1984 as against 1934 lakh pieces during 1983, thus registering an increase of 19.34 per cent.

A scrutiny of the territory-wise export performance shows that the maximum increase in the export effort for garments was to countries which are outside bilateral agreements, where exports increased by 43.21 per cent during 1984. Countries like Japan, Australia, Saudi Arabia and USSR fall in this category to which 617 lakh pieces of apprel worth Rs. 237.89 crore were exported during 1984 as against 518 lakh pieces worth Rs. 166.11 crore in 1983.

Apparel pieces numbering 136 lakhs valued at Rs. 51.78 crore were exported to Sweden, Finland, Austria and Canada which fall in the category of restricted countries other than EEC. This territory registered an increase by 34.95 per cent in 1984 in value terms over 1983 when 104 lakh pieces valued at Rs. 38.37 crore were exported to countries within this territorial division.

The EEC countries accounted for Rs. 279.84 crore worth of apparel exports during 1984 which reflects a 30.01 per cent increase over the export figure of the previous year, which stood at Rs. 215.24 crore within the Community. U.K. ranked as the largest single importer of apparel from India with imports worth Rs. 94.43 crore during 1984, followed by West Germany with apparel imports worth Rs. 87.67 crore.

In the case of apparel exports to USA, 1984 has bettered the export performance by 27.57 per cent over 1983. Exports stood at Rs. 281.18 crore during 1984 as against Rs. 220.41 crore during the previous year. □

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Public enterprises look up in 1984-85

THE FINANCIAL PERFORMANCE of the Central Public Sector Enterprises as a group shows an improvement during the first nine months of 1984-85 as compared to the corresponding period of the previous year. This is based on the assessment of the overall performance of these enterprises by the Bureau of Public Enterprises for the period April 1, 1984 to December 31, 1984.

The gross margin during the period had also increased from Rs. 3913 crore to Rs. 4556 crore. Profitability ratio in terms of gross profit to capital employed shows increase from 10.76 per cent during April-December 1983 to 10.90 per cent during 1984-85. The turnover has increased from Rs. 32067 crore during April-December 1983 to about Rs. 36680 crore during April-December 1984.

The capacity utilisation of the saleable steel during this period was 67 per cent against 60 per cent during the corresponding period of last year. While aluminium (84 per cent), copper (83 per cent), fertilizers (60 per cent) showed improvement over the previous year's capacity utilisation of 57 per cent, 69 per cent and 40 per cent respectively, the capacity utilisation in case of zinc (60 per cent) and lead (47 per cent) was lower than that of the previous year at 70 per cent and 69 per cent respectively.

The target achievement of major groups of industries during the first nine months of 1984-85 reflects: steel ingot 87%, saleable steel 96%, coal 96%, lignite 109%, aluminium 109%, zinc 80%, lead 60%, copper 94%, iron ore (NMDC) 101%, fertilizer 113%, petroleum crude 97%, petroleum throughput 104% and cement 84%. □

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Towards better industrial relations

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yojana

MAY 1-15, 1985, RUPEES 1.50

Delinking degrees from jobs, no solution!

NEXT ISSUE

Focus on black money

Central help to promote national integration

VOLUNTARY ORGANISATIONS, institutions, universities and other educational institutions will receive financial assistance for activities undertaken in the cause of national integration under a scheme evolved by the Union Ministry of Home Affairs.

The objective of the scheme is to enlist the cooperation of voluntary organisations for mobilising constructive forces of society and encouraging them to take up activities connected with national integration.

The voluntary organisations seeking such assistance from the Union Ministry of Home Affairs should be registered bodies under an appropriate Act with a written constitution. The aims and objectives of the organisations should be relatable to the objectives of the National Integration Council.

The activities which will be considered eligible for sanction of grants should be in furtherance of the objectives of the National Integration Council contained in the declaration adopted by the Council at its meeting held in Srinagar in June, 1968. These activities illustratively may relate to : (A) discouraging communal ill-will and regional animosities, and weaning the misguided elements from the path of violence; (B) active and energetic propagation of the principles, especially of tolerance and harmony for which this nation stands; (C) mobilising the constructive forces of the society in the cause of national unity and solidarity and giving the leadership encouragement and articulation; (D) devising suitable community or group activities and programmes for fostering fellow-feeling, emphasising the privileges of common citizenship and, in general, raising the quality of national life.

The activities may be organised in any of the following forms : (a) Seminars and discussion groups; (b) Inter-community celebration of national days and festivals; (c) Cultural shows; (d) Publication of material bearing on issues and problems of integration and emphasising the basic national values; (f) Citizen committees for the maintenance of communal harmony; (g) undertaking objective investigation or case-studies of local issues or events relevant to maintenance of peace, goodwill and tolerance among citizens; (h) Public meetings, exhibitions or group endeavours of a similar description to foster fellow-feeling and to highlight the essential principles of Indian nationhood and secularism; and (i) Supplementing the financial resources of an organisation which is devoted as a whole to the furtherance of communal harmony, secularism and national unity. □

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Towards better industrial relations

S. K. Sangal

The author favours the fostering of cooperative approach in the conduct of industrial relations in the wake of growing industrial unrest in the country. He holds the view that the industrial relations machinery will have to be refashioned to ensure speedy and amicable resolution of industrial disputes and differences which, he points out, have been on the increase in the recent years. Also, without improving the efficiency of management and labour-management relations, the fulfilment of the 7th Plan would remain a distant goal. The author feels that the Plan must, therefore, identify precise and concrete measures in this direction.

THE TASK OF promoting industrial peace against the background of uncongenial industrial relations climate has posed a formidable challenge. If the government desires that there should be a planned programme of investment, development and modernisation, it is a pre-requisite that attempts are made to improve industrial relations. In such a situation, it is necessary that ad hocism in the enforcement of labour laws is done away with.

Cooperative Approach Needed

In a situation when India has opted for a mixed economy, it is necessary that industrial democracy is promoted by fostering cooperative approach in the conduct of industrial relations. At the same time, industrial relations machinery will have to be refashioned to ensure speedy and amicable resolution of differences. Last, but not the least, is the need to minimise the destabilisation effects on industrial relations emanating from the enforcement of policies and programmes.

The industrial relations have assumed a greater importance during the Seventh Plan in view of the fact that the approach paper considers harmony and peace essential to achieve the planned targets of production and also secure improvement in efficiency and productivity. The question arises whether industrial relations would improve as desired during the next plan.

Efforts are continuing in the Union Labour Ministry to find a way for labour-management cooperation. Already, the Minister for Steel, Mines and Coal, Mr. Vasant Sathe has initiated a dialogue with the labour leaders of the three central trade unions—INTUC, AITUC and CITU—in regard to participation. He categorically stated that the primary objective was the creation of harmonious atmosphere in the coal industry and there was no intention to by-pass the trade unions. He also expressed the view that one union-one industry would go a long way in the implementation of the participation scheme.

It was agreed that there was need to develop a healthy participative culture in the coal industry along with changes in the attitude of both the management and the employees to avoid confrontation.

Growing industrial unrest

A glimpse at the trend of inustrial unrest during 1971—83 shows that the problem had become increasingly acute and this unrest stemmed from a number of factors including mental attitudes of the labour and management towards issues affecting their rights and interests which played a critical role. Keeping in view the past behaviour, it is difficult to believe that

industrial relations would be any better during the Seventh Plan. These attitudes are coloured by ideological orientations and they are not susceptible to change in the near future.

During this period mandays lost were highest at 88.4 million, while workers involved were 15.16 lakhs. However, during 1974 while workers involved were 28.55 lakhs, the mandays lost were 40.3 million. It has to be seen that there has been a rise in the number of disputes during 1977—79 and the same registered a fall after 1980. But 1973 was an exceptional year when number of disputes was the highest at 3,370 and the workers involved totalled 25.45 lakhs.

These mounting disputes !

There has been a steady deterioration except during the Emergency. Since the lifting of the Emergency in March, 1977, there was a sharp deterioration in labour-management relations. In the private sector, conflicts were many and the severity of unrest was greater in the manufacturing units. According to the Council of Indian Employers, the severity of industrial disputes may be judged by a ratio of the number of mandays lost per dispute. The disputes were relatively less during 1971—73, 1976 and 1978 and in 1980 when the number of mandays lost per dispute varied from 6,012 (1971) to 8,892 (1978). However, the dispute in other years were more severe and severity may be gauged from the fact that mandays lost per dispute varied from 11,272 mandays (1975) to 20,585 mandays (1983). Since 1981, industrial actions have grown in severity as the number of mandays lost per dispute numbered 14,130 in 1981, 13,217 in 1982 and 20,585 in 1983.

During this period workers participated in strikes in large numbers which led to increased influence of indiscipline and violence. The net result had been lockouts as a response to violence. There had been some disputes which related to monetary issues and they included wage revisions, DA, allowances, bonus and ex-gratia payments. The others were non-monetary and they were related to such matters as personnel, retrenchment, leave, hours of work and others. Thus the industrial relations situation during the period had been one of long spells of nightmarish conflicts interrupted by short spells of respite. (See Table I).

Seventh Plan approach

The approach paper of the Seventh Plan observes, the success of "the Plan depends very much on the human factor". It attaches greater importance to: (a) the efficiency of management, and (b) labour-management relations. It is realised that without improvement in these two areas, the fulfilment of the Seventh Plan would remain a distant goal. The approach paper desires induction of honest, imaginative, dedicated and professional cadres. The efficient management system is imperative for the effective implementation of the Plan.

Knotty problems

The two issues on which the trade unions, operating in the central public sector enterprises, are competing with each other to whip up the feelings of the workers for a country-wide agitation are : (1) the payment of annual bonus, and (2) the rate of dearness allowance neutralisation. The government, which has all along been succumbing to the pressures of trade unions in its anxiety to preserve its pro-labour image, is in a quandry. It is an unenviable position of a person who is holding a tiger's tail, unable to loosen his grip or continue to hold the tail. Either way, the public sector, which is required to play a greater role during the Seventh Plan, is already in the red and it will be the ultimate sufferer. If the Centre concedes the demands of the unions, there will be an additional burden on the already burdened public enterprises and if the government decides to be firm in resisting the pressures from the unions, it will have to encounter a total stoppage of production to add to the loss of the public enterprises.

Bonus ceiling hike

The approach paper visualises for the Seventh Plan a total outlay of Rs. 3,200 billion (at 1984-85 prices). The public sector has a great role to play since it employes about 200,000 workers in 21 Central public sector units. However, this does not include insurance companies. These workers are being paid a minimum bonus of 8.33 per cent of the wages earned by them during the accounting year. However, where the payment of bonus is justified by the availability of allocable surplus, it is subject to a maximum of 20 per cent of the employees' annual earnings. Now the government has acceded to the demand of the labour that the national ceiling of Rs. 750 be done away with. This ceiling during 1985-86 Budget has been raised to Rs. 1,600.

New wage agreements

It may be mentioned here that on the expiry of long-term wage agreements during 1982-83, the third round of wage negotiations gathered momentum. The Bureau of Public Enterprises, the nodal agency in the Union Finance Ministry to process the wage agreement for government approval, issued guidelines to the managements of the public sector units. However, the final conclusion of the wage negotiations and consequent signing of the agreements meant a total loss of face for the Bureau of Public Enterprises. The BPE had proposed a 10 per cent limit on wage increases with no retrospective effect and such an increase was to be linked to productivity.

The settlement finally reached extended wage hikes ranging from 14 to 17 per cent. The minimum increase was Rs. 125 a month. The two-member Arbitration Board for cement industry gave a total increase at the minimum level of Rs. 10 a month

and the public sector Cement Corporation of India had to accept it.

The question of D.A. increase !

Another issue that the government had to cope with was the issue of the revision of the rate of variable dearness allowance in the public sector units. The prevailing rate of Rs. 1.30 per point shift in all India Consumer Price Index with 1960 as the base year was not acceptable to labour representatives and they expressed the view that the per point shift had lost relevance because of the rapid erosion in the value of the rupee. The trade unions came out with the threat of a country-wide strike if the government did not agree to the upward revision of the rate. In its anxiety to avoid any show down, the government constituted a 20-member tripartite committee to go into the question. The committee proved a non-starter since the terms of reference were not acceptable to the labour leaders. In defference to the wishes of the trade unions, the government modified the term of reference by which the committee was to consider only enhancement in the rate of Rs. 1.20 per point shift. It was a pity that the entire committee, which was to go into the ramifications of the issue and reach a rational formula, was turned into a negotiating committee. The government representatives were to blame for such a development. Government came out with an offer of Rs. 1.50 per point shift in the CPI numbers, while the labour representatives demanded Rs. 2. However, the CITU and AITUC representatives could not assert since they had already accepted a rate of Rs. 1.50 in the wage agreement of engineering workers in West Bengal. The committee was to submit a report within three months of its appointment. It is more than a year and a half and it has failed to find a solution. (The D.A. neutralisation rate for Public Sector units employees has been raised from Rs. 1.30 to Rs. 1.65 per point from April 1, 1985.)

In such a situation one fails to understand how there can be peace in industry. No doubt, the demands of labour do not relate to the production and productivity, yet the labour is holding the country to ransom. The percentage of labour content in the total cost of production ranges from 1.6 to as high as 46 in the public sector units. Any revision in the payment of the annual bonus to the workers or in the rate of DA nutralisation will be an additional burden on the public sector units. (see table II at the end of this article).

Link wages to productivity !

The demands can be conceded if there is a categorical assurance from the workers' side that they would ensure increased production through higher productivity. Here is a genuine case for linking wages to productivity. Though labour is not the only factor in achieving improvement in productivity, the trade union leaders refuse to talk of productivity on political considerations.

In such a situation where the labour is holding the country to ranson and is not prepared to even concede the normal requirement of production and productivity, the efficiency of the management would demand that they should be sensitive to the social objectives of the project. Hence the Seventh Plan must identitfy precise and concrete measures to change the management and administrative systems for the better.

The management of labour and other productive human resources will be the crux of the implementation of the Seventh Plan. Labour must be made to understand their responsibility, specially when they want all the facilities at the cost of the unit and society.

Table I

Trend of Industrial Disputes in India, 1971-1983

Year	Number of: Disputes	Number of: Workers Involved (in lakh.)	Number of: Mandays Lost (in millions)	Time Loss Per 1000 Workers in the Sectors of: Manufaturing	Time Loss Per 1000 Workers in the Sectors of: Plantations	Time Loss Per 1000 Workers in the Sectors of: Coal-Mines	Number of Mandays Lost: Per Disputes	Number of Mandays Lost: Due to Strikes per Worker	Percentage Distribution of Total Mandays Lost in: Private Sector	Percentage Distribution of Total Mandays Lost in: Public Sector	Share of Mandays Lost Due to Lock-outs in Total (In %)
1971	2,752	16.15	16.5	2,301	2,098	1,639	6,012	8	86.4	13.6	28.7
1972	3,243	17.37	20.5	3,305	625	2,502	6,335	9	83.7	16.3	33.1
1973	3,370	25.45	20.6	2,999	476	1,897	6,120	6	83.6	16.4	32.8
1974	2,938	28.55	40.3	4,704	2,950	1,515	13,704	12	67 5	32 5	16.4
1975	1,943	11.43	21.9	3,615	58	387	11,272	16	90.2	9.8	23.7
1976	1,459	7.37	12.7	2,157	46	145	8,736	5	93.2	6 8	78.0
1977	3,117	21.93	25.3	3,213(P)	650	1,567	8 123	7	82.3	17.7	47.0
1978	3,187	19.15	28.3	3,534(P)	986(P)	1,577	8.892	9	84.7	15.3	45 6
1979	3,048	28.73	43.8	5,896(P)	768(P)	2,447	14,388	13	82.5	17.5	18.4
1980	2,856	19.00	21.9	2,543(P)	856(p)	1,263(P)	7,677	7	81.1	18.9	45.2
1981	2,589	15.88	36 6	4,508(P)	1,602(P)	1,988(P)	14,130	17	72.5	27.5	42.0
1982(P)	2,478	15.16	88.4	@	@	@	13,217	17	87.3	12.7	52.9
1983(P)	2,106	13.34	43.3	@	@	@	20,585	@	@	@	@

Notes : (P)=Provisional. (@)=Not Available.

Source : 1. Indian Labour Statistics, 1979

2. Review of Industrial Disputes in India during 1981.

3. Pocket Book Labour Statistics, 1983.

Source : Employers' Council

Table II

	Cost of production (Rs. in crores)	Labour content (Rs. in crores)	Labour content(% of cost of production)
Steel	3638.83	479.83	13.2
Minerals and Metals	783.07	136.72	17.5
Coal	2128.00	978.58	46.0
Power	44.18	14.96	33.9
Petroleum	14976.89	235.92	1.6
Chemicals and Pharmaceuticals	2217.29	152.75	6.9
Heavy Engineering	1639.39	298.88	18 2
Medium & High Engg.	941.7	215.64	22.9
Transport Equipment	1051.72	187.85	17 9
Consumer goods	295.85	59.75	20.2
Agro-based Industries	46.19	12.51	27 1
Textiles	578.64	195.21	33.7

There has also been a growth in emloyment, emoluments, per capita emoluments and percentage growth since 1971 as can been seen from the table below:

Table III

Year	Employment in lakhs.	Employment in crores of Rs	Per capita emoluments of Rs.	Percentage growth in emoluments
1970-71	6.60	361	5470	—
1971-72	7.01	415	5920	14.96
1972-73	9.32	541	5805	49 86
1973-74	13.44	749	5573	107 48
1974-75	14.32	1060	7402	193.69
1975-76	15.05	1352	8983	274.52
1976-77	15.75	1408	8940	290.03
1977-78	16.38	1646	10048	355 95
1978-79	17.03	1908	11201	428 83
1979-80	17.75	2214	12468	513 60
1980-81	18.39	2619	14239	623 82
1981-82	19.39	3133	16158	767.87
1982-83	20 09	3618	18009	902 22

New fish production technology

THE COUTNRY'S PRESENT fish seed (carp fry) production is estimated at 200 crore fry against the requirement of 1,200 cróre fry. In the innumerable tanks, reservoirs, beels, etc. 4 million tonnes of fresh water fish could be produced if adequate seeds (fish fry) were stocked and scientific management practices adopted.

To reach this target of 4 million tonnes of fresh fish, Central Inland Fisheries Research Institute (CIFRI), Barrackpore, has developed a technology that will ensure a production of four crore fry per hectare of water area. At present only 50,000 to one lakh fry are produced per water hectare. The new technology was developed by CIFRI at Rahara. There are 33 ponds of a total of six hectares water area. The scheme centres round a package of practices including preparation of nursery ponds, application of organic manure, followed by application of biodegradable organo-phosphate (i.e. sumithion) and supplementary feed. The organo-phosphate kills unwanted food in water and retains only what the tiny fry utilises as live feed.

CIFRI believes that if this technology is adopted in the country, the present shortfall in seed production would be a thing of the past. This, in combination with a production technology of marketable fish at the rate of 5 to 10 million tonnes per water hectare of carps, developed by CIFRI and demonstrated all over the country will go a long way in increasing the supply of fish and decreasing price of this protein rich food.

The CIFRFs pioneering research effort in fresh water fish culture has led to the development of techniques for induced production of Indian major carps and exotic carps in captivity, in glass jar hatcheries for large scale production of fry, to the tune of six million seedlings per hectare.

There are four lakh hectares of water area available for inland fisheries in West Bengal. Seventy per cent of fish seeds grown in these water areas are supplied outside the State. Those who are engaged in fish culture in the State are generally poor. The Government is trying to raise their economic status by helping them with bank loans for the purchase of mechanised and other water transport and fishing nets. □

UNESCO assistance for sanctuaries, parks

NINE NATIONAL PARKS and sanctuaries in India are proposed to be listed under the Convention for the Protection of the World Cultural and National Heritage, which is operated by UNESCO. These are:

Kaziranga National Park, Assam.
Manas Sanctuary, Assam.
Keolandeo Ghana National Park, Bharatpur, Rajasthan;
Ronthamboro National Park, Rajasthan;
Gir National Park, Gujarat;
Sunderbans National Park, West Bengal;
Kanha National Park, Madhya Pradesh.
Nanda Devi National Park, Uttar Pradesh
Little Rann of Kutch Sanctuary, Gujarat;

However, the International Union for Conservation of Nature and Natural Resources will be preparing evaluation during 1985 for the first three sites only.

Development of National Parks is an ongoing activity. The Central Government provides financial assistance to the States and Union Territories for selected National Parks. □

Women, technology and forms of production !

A workshop on "Women, technology and forms of production" was organised by the Madras Institute of Development Studies recently with assistance from the Union Ministry of Labour and Rehabilitation and the Indian Council of Social Sciences Research, New Delhi. Several aspects of the subject matter considered at the workshop were : Is technology gender neutral ? Who takes decisions in introduction of new techniques and whose interests are served ? Can questions of technology and forms of production be studied without considering the socio-economic-cultural context or without considering production relations ? Can these be analysed without considering the nature of power relationships within the household ? What is and what ought to be the role of the state if women's interests are to be protected ? Do trade-unions address themselves to these issues and are they likely to do so ? What is the role of women's organisations ? These were some of the questions raised and discussed at the workshop and following are the conclusions that emerged from its deliberations.

IT WAS AMPLY illustrated at the workshop that the relationship between technology and socio-economic structure is a complex one and that new technologies in certain spheres, while having thrown women of certain classes out of employment, have also increased household incomes in some others. And even in those, where they have increased employment and|or income for women, have not necessarily changed the status of women.

Women's role in agriculture

It was evident in agriculture atleast that there exists no unique correlaion between the nature and quantum of work done in agriculture and the socio-economic status determined in terms of control over production and decision making. In much of Africa, even though women are the prime movers in the food economy, there are wide variations across regions. Any step to alter the existing poorly endowed agriculture by strengthening the forces of production has to take into account the locale and the people. The impact of modernisation on women's participation in Africa shows that even if land settlement and agrarian reform, introduction of new tools of cultivation, high-yelding varieties, packages, cooperation, switch to cash crops or training and extension were all *per se* neutral, there was a lack of understanding of the local farming systems in project formulation and implementation which resulted in an allocation of land rights based on the European pattern, differential and unequal access to training and an inaccurate appreciation of the intra-household distribution of duties and rights relating to economic activity. All these contributed to a slide back in women's position. Agricultural modernisation and technology infusion have by and large been introduced in Asia without regard for changing the rural social structure. Thus land reforms, technology, extension services and access to modern inputs and credit have been explicitly class and male-biased, thus deepening the cleavages between male and female employment and household status with agricultural modernisation.

As a specific group

It is important to ensure that technological changes in agricuture also increase women's welfare not only in terms of their employment, but income, health and nutrition as well. It is necessary to adopt both a 'farming systems approach' to agricultural development as well as a 'target Group planning approach' where the individuals rather than the households are the targets along with measures to facilitate access to land, input, credit and extension services to women. In this context, the incorporation of women as a specific group in planning exercises needs to be noted. It should not be forgotten that a concerted approach to rural development is a necessary by-line to these.

Why low status ?

It is also clear that development in general cannot be seen as a unilinear process. Its effects depend on the form of development, and women's position, which takes into account women's involvement in the basic production unit, should be related to the state, and the background and direction of development. The effects of technology, urbanisation and the growth of markets on women, examined in the context of specific industries and occupations such as the fishing industry of Tamilnadu, shows that the prevailing economy and technology, asset ownership pattern, socio-cultural and traditional values of the fisher-folk, and their political and social awareness contributed to the low status of the fisher-women as a group. The introduction of the auction system of marketing forces women to compete with large traders, causing them to lose out of their earlier activity of fish marketing. The socio-cultural values and norms only serve to reinforce the view that women cannot claim control and manage production assets. Income earning activities while necessary are not sufficient to alter their low status. In the export-oriented fish processing units in Gujarat employing women migrant workers from Kerala, it was found that despite the fact that Kerala women had a much longer history in the fishing industry and had acquired greater skills than the Gujarati women, they were paid lower wages than them for comparable tasks. These migrant women coming from families of abject poverty were a more vulnerable group being relatively young, unmarried and non-unionised. In both these cases the expansion of market has been from a local to a national and international one. In this context of market expansion, it is not surprising that big capital operates. What is noteworthy is the manner in which big capital uses the specific vulnerabilities of women in a particular socio-cultural context to its own advantage.

Their declining numbers in Textile !

The Indian textile industry provides scope of examining both gender division of labour as well as the degree of independence gained by women engaging in productive work, under different forms of production organisation. In the Coimbatore region of Tamilnadu where handlooms, powerlooms and mills including composite mills exist, it is found that in the mill sector while total employment has hardly grown in the last twenty years, the recruitment of women as well as the proportion of women workers has been decreasing. The three shift system of work in mills has obviously taken toll of women's employment. In the powerloom sector on the other hand, the use of women's wage labour is strongly correlated to the number of looms in a unit such that the larger the number of looms the more frequent the use of women's wage labour. The handloom sector is predominantly a family labour market based on production in household units, and the majority of women workers are family workers indeed. Thus in terms of employment and degree of independence, the powerloom sector appears more favourable, though even here job segregation is quite evident. While women do have access to both high-paying and low-paying jobs in the powerloom sector, those in the former are however smaller in number. Also the powerloom sector does not come under the purview of labour legislations.

Overall it can be said that rationalisation of production in the textile industry affects women workers in labour intensive parts of the production process. Women tend to be increasingly relegated to such parts of production which are subsequently automated. Unequal labour legislation for men and women has led to a less favourable position for women in the labour market in the consolidation phase of an industry.

The activities of the Khadi and Village Industries Board in Gujarat confirms once again the sexual segregation and concentration of women in low wage occupations. It also raises the question whether decentralization will *per se* be either democratic or more autonomous.

Meant for unskilled tasks !

The coal mines of Eastern India serve as an example of the dispensibility of women labour under conditions of capitalist industrialisation. Technological development in the coal industry cast the die of redundance for women. Women have been assigned mostly unskilled tasks which are vulnerable to mechanical appropriation. Contrary to all historical evidence, it is also being increasingly believed that women are suitable only for these unskilled tasks. Consequently there has been no attempt to impart training and skills so as to enable them to adjust to the reorganisation of work. Women in the coal industry lost not because of their inherent frailty but because of their redundance in the capitalist labour process.

While the specific industries and occupations indicate in the concrete the impact of changes in technology and organisation of production on women, certain pointers for action and policy also clearly emerge. These pertain to recommendations about the nature of women's jobs; long term issues concerning women, technology and forms of production; and the role of the state, trade unions and women's organisations.

Train them for all jobs !

Training and skill acquisition constitute an important dimension of women's work. There has to be a clear recognition of the kind of jobs for which women are to be trained and stereotyping of women's role such as imparting training only for tailoring, embroidery or hair and skin care should be avoided. The training must also be appropriate to the target group in terms of prior qualification and social background for it is not infrequent that those who undergo training are reluctant to undertake paid employment or factory work. The training programmes must consider the existing job market situation as well as the future skill requirements. The role of the state cannot be minimised. The training programme should not only be linked to a work programme, but should also be integrated with the National Five Year Plans. Both in training and employment the state should serve as a model.

Why prejudice against them?

The need for a clear definition of jobs and classification of skills is necessary to ensure that women's work gets properly evaluated. Minimum wages in the country are stipulated task-wise for an industry, where the tasks are categorised into those requiring skilled, semi-skilled and unskilled labour. Generally women are found to be more numerous in tasks that are called unskilled. It is necessary to re-examine the definition of skill as used for official purposes, particularly to note whether prejudices about the nature of women's tasks commonly held, is carried over into official classifications, as also to examine whether the tasks women perform do actually require less skill or not. There are also instances where a particular task considered to be a women's task are taken over by men once the wage rates are increased. A review of the definition and categorization of skills would involve a detailed examination of the nature of the labour process in different industries as also studies on comparitive worth of tasks that women perform. Such an assessment also necessarily includes evaluation of women's work, where work consists of not only economically productive work but all work in general, including paid, unpaid as well as domestic.

Retrain them for new technology

The technology policy must be more carefully monitored from the point of view of women's employment. It is by now well known that with the introduction of modern technology, women tend to get displaced even though the new technology could have been mastered by women. A close monitoring of the implications of technology changes on women would necessitate retraining of women for the new technology. Also, it is quite evident that with rationalization of production, multiple shift systems are introduced in factories and owing to the ban on night work for women, they are displaced quite often.

Implement labour laws !

Labour legislations in all applicable spheres must be vigorously implemented. It is also imperative to have a review of the penalty clauses for the violation of such laws, for as expressed by some factory inspectors themselves, it is quite often profitable for a unit to violate the law and pay a small penalty, as the implementation of a particular labour law turns out to be more costly than its violation. The existing legislation with respect of provision of creche facilities stipulates that a total of thirty women be employed by a unit. This should be altered so that units with a limited number of employees also get the facilities and the demands by men too for the provision of creches should be taken seriously. While recognising that the provision of creches is the responsibility of private employers, it should still be possible through the imposition of a cess, to provide one creche in each industrial estate. The provision for creche should be made mandatory all over the country.

Fix minimum wages

Among the long-term issues, the need for fixation of norms for minimum wages is long felt. In many industries the minimum wages stipulated are the outcome of the historical factors of that particular industry. There is also no clear definition of a minimum wage, especially as to whether the individual or the family should be the basis for it. Also, as labour it still a concurrent subject, minimum wages schedule and other central legislation do not get adopted by all states automatically. This has quite often resulted in a flight of factories and consequently of employment opportunities from one state to another neighbouring one as in the case of cashew factories in Kerala which were shifted to Tamilnadu. Given the fact that minimum wages are the legitimate right of workers, the rationale of its coverage being confined to industries listed in the minimum wages schedule needs to be questioned and its implementation in all industries must be taken up immediately. In some of the women-oriented industries such as the export garment industry in Madras there is a record of almost eleven years of struggle by workers before the minimum wages were notified for that industry.

Apart from the question of minimum wages, there is also the need to consider the implications of both time rate and piece rate wages. It is well known that piece rate wages are oppressive and serve as an inducement for child labour. It is also true that home-based production and putting-out systems are the forms of production where piece rates are most common. In these forms of production there are difficulties in implementing time rate wages. There is a need to think of measures to mitigate the evils of the piece rate system of wage payment.

Involve them in social production

In the long-run, measures to abolish home-based production|household production, putting-out systems of work and contract system of employment are necessary not only from the point of view of wage payment systems but also because it is necessary to draw women out of their homes and encourage them to

(Continued on page 17)

Delinking degrees from jobs, no solution !

Kamal Nayan Kabra

A lot of debate has been going on the proposal for delinking degrees from government jobs. In this article the author is of the view that such a step, particularly for coveted class-I Services like IAS, IFS, IPS, etc. could produce far-reaching effects. A serious thought has to be given to the proposal by all those concerned with development and well being of the nation. Kabra feels that delinking of degrees from jobs will not increase jobs, will worsen the chances of selection of youngmen from poorer families as a result of the lowering of the age of initial selection, will affect quality of selection and is contrary to equality, social justice and rationality.

AMONG MANY 'REFORMS' presently being placed high on the agenda for immediate action, one hears of some basic changes in the educational system. Stressing the organic link of education with the productive forces, the changes which are under active consideration are : delinking of degrees from government jobs, starting an open university for improving access to higher education, increased emphasis on vocational education, expansion of central schools by opening one such school in each district as centres of excellence, and changes in the curricula to cover national heritage and culture and removal of communal and parochial contents from it.

Enough details are not available on various elements of these proposals. However, there are indications that some experts have been asked to work out the details and modalities of these schemes. These proposals have surfaced time and again and have been examined at some length. Particularly, the delinking of degrees from government jobs was deliberated in the mid-seventies. It is also reported that the Economic Administration Reforms Commission had submitted proposals to this effect suggesting that selections for government jobs should be made at 10 + 2 stage.

Except for delinking as contemplated, all the other proposals are being implemented atleast to some extent and in certain forms and are not entirely new.

The proposal to delink degrees from public jobs, particularly for the coveted top-most Class I services like IAS, IFS, IPS, IRS, etc. (and possibly also for so-called class II jobs), could produce far-reaching effects. Not only the younger generation and their parents need to seriously think about the measure, but anyone concerned with development and well-being of the nation must give a serious throught to the proposal.

Higher education, why !

What is sought to be achieved by delinking ? It is maintained that our higher education is crumbling under the weight of the numbers it is made to cater to. See Table I. Compared to less than 3 lakh students in higher education centres, the number was about ten times in 1982-83. Both at post-graduate and research level, there has been a steep increase in University enrolment. More education is becoming so much the worse education. It is said that this education is aimless and disfunctional to national development. The protagonists of the move suggest that there is great and growing demand for higher education because a university degree is presently a must for generalist, higher government jobs which

are presently rated about the best available in the Indian employment market. If degrees no longer remain necessary for obtaining these highly-valued jobs, it is suggested that many would give up the inclination to go to a college/university Thus only those who are inclined to go to various professions, teaching, research, etc. would enter the universities and it is hoped that with reduced number, better amenities, better teacher-pupil ratio, greater motivation to learn and teach, the productivity and excellence of our higher education would improve. For a basically qualitivate problem, reduction in number is advocated. It is further pointed out that since the number of persons with degree will thus fall, there will be a fall in the number of education unemployeds (See Table III). A serious waste would be reduced. If delinking is accompanied by vocationalisation of secondary education, appropriate skills would be imparted to the youth in order to enrich the link between education and the productive apparatus.

What delinking would achieve ?

An additional merit of the proposed scheme is claimed to be that since government officers would be recruited at younger and more impressionable age, *a l a* the pattern in the defence forces, and would be given extensive and intensive education and training in accordance with assessed and felt requirements by the users of their expertise and services, we may obtain better qualified and equipped bureaucracy. Mismatch between the knowledge and skills of the candidates selected and job requirements would be reduced It is claimed that this would improve effectiveness of administration.

Higher education for growing economy

Such an impressive case does require a closer scrutiny lest we make a false start based on fancy assumptions. For one, do we have an excessively large number of students overcrowding our universities and colleges ? In terms of absolute number and the annual rate of growth (which has come down from over 13 per cent in the sixties to about 4 per cent during the seventies) we have a really large army of college and university students. Given the neglect of higher education during the colonial era, a large pent-up demand, needs of a growing economy and emerging democratic polity with increasing industrial and urban growth along with the objective of having a better educated manpower in order to catch up with scientific and technological revolution, a growing student population in our institutions of higher learning is quite understandable. However, the proportion of population in the relevant age-group (17 to 23 years) was about 6.8 per cent only in 1891 (See Table IV) and lately enrolment growth has been restrained. The proportion of college students to primary and secondary students is also not very high. Hence, it is naive and misleading to hold that our university population has expanded too much.

This does not mean that the numbers are not causing any problems in the sphere of higher education. Our per student expenditure is rather low, though differs widely among states and universities. The teacher-taught ratio too is not too good. It means that we have gone in for low-cost expansion of higher education by refusing to allocate resources to this sector commeasurate with permitted rate of its growth. The growth in the number of graduates has been far in excess of the rate at which we could absorb them in our work force, leading to growing graduate unemployment.

Graduates outstrip jobs !

Thus the large numbers crowding the portals of colleges could be considered high because they lead to a thin spread of facilities and resources (about Rs. 330 per student) lowering the quality of instruction Additionally, we turn out graduates at a rate far in excess of available job opportunities. The first argument can make sense if we had exhausted opportunities for qualitative improvements in higher education and numbers had been preventing these reforms. Today, few would be found who could vouch for the relevance of what is taught in the universities. Vocationalisation, greater connection between education and the needs of the production system and better work ethics cannot come about by delinking, while delinking would not create jobs for vocationally trained who have greater capacity for socially relevant work The absorptive capacity among the students is low because of the malaise at the secondary stage, poor and inappropriate family atmosphere and living conditions, our language policy and inability to produce quality text-books for higher learning. Natural and social sciences and liberal subjects have imitative content divorced from our conditions, context, needs and aspirations.

Improvement with no costs !

Teachers, themselves a product of an ineffective, irrelevant and disfunctional education and denied of essential pre-requisites for sustained academic pursuits, can only produce successively poorer, deteriorating out-turn of graduates. Many of these qualitative changes would hardly require any additional outlays.

Qualitative reforms overdue !

There are many wasteful educational expenditures by callous, unimaginative and imitative academic establishment. Simply by adoption of less costly building designs, material and furniture, money could be found for policies to improve the quality of education. Proliferation of universities itself has contributed to wasteful spending and compromised quality. Most important, there are such glaring wastages, luxury, pomp and extravaganza in many other spheres (trade, industry, politics, administration,

social customs, etc.) that education can hardly be spared of these contagious ills. The point is that while large numbers can be given a more meaningful, better and effective education by qualitative changes without extra outlay by re-appropriation, a reduction in the number admitted to colleges cannot by itself initiate any worthwhile improvement unless the long overdue and little understood qualitative reforms are carried out. The emphasis on large numbers spoiling the game of better higher education may well be a gseudo-diagnosis and a hoax!

For better prospects !

It is no doubt true that imparting higher and costly education and not making use of it by giving employment and earning opportunities is a serious wastage and unpardonable indictment of our system. But can diversion of fund from education to employment make a reckonable difference when the cost of creating one employment opportunity is hundreds of time more than that for educating one person? Do students become unemployable because education formally over-qualifies or mis-qualifies them? Afterall, the waiting period for employment is shorter for graduates than for matriculates. It means by going in for higher education a man improves his job prospects. Not only that, but the life-time earning profile also generally improves with higher education. In a competitive employment market, it is only fair that one strives to improve one's competitive advantage by undertaking higher learning

Delinking does not increase jobs

Delinking of jobs from degrees cannot obviously increase the availability of jobs. Hence, the burden of graduate unemployment would be shifted to matriculate unemployment, if delinking succeeds in reducing private demand for higher education. Thus though higher education is over-expanded in comparison to the extent of availability of work opportunities, not much can be achieved by cutting down the former becaue by adopting this course job opportunities do not increase.

Affects the poor !

Delinking is likely to bring about a lowering of the age of initial selection. This would worsen the chances of selection for the youngmen from poorer families, rural areas and occupations like farming and artisans where family educational level is relatively low. Those with higher income, higher social and educational status, better social connections and in urban-metropolitan areas would acquire better access to higher public jobs. Those who struggle for getting education, by earning while learning, acquire competitive abilities at a later age and would find entry into many jobs barred by the proposed delinked, catch-them-young scheme.

The painful phenomenon of extensive unemployment among the educated has much less to do with the educational system than with the economy, its management and functioning. The paradox of a skill-poor economy failing to make use of available skills and inadequate and improper development of skills by educational endeavours captures some basic weaknesses of our economic and social system.

Higher education for public good !

Having cast serious doubts on the thesis of excessively large numbers corroding and devaluing our universities in so far as quality of education and availability of work opportunities are concerned, let us turn to the question of demand for higher education. Can we significantly reduce the private demand for higher education by doing away with the necessity to possess a university degree for securing higher government jobs? Higher education is a public good which is demanded by private persons—students and their parents—for a variety of reasons.

For better prospects !

Improvement of the prospects for jobs (in terms of ease of obtaining it and the expected returns from it) certainly plays a large part in the private demand for higher education. Table VII shows that simple graduates are a small fraction of successful I.A.S. candidates. However, simply by giving access to some government jobs, numbering every year a few thousand for the all-India and state level services, without insisting on a university degree, only a small fraction of the demand for college education can be influenced. Over a reasonably long period, the competition for the remaining "linked-jobs" may intensify, leading to greater rush for admission to colleges.

Not for jobs alone !

A great majority of our graduates are third divisioners and the failure rate is also very high. Despite their low scholarly calibre, it would be too much to believe that they are not aware of their limitations in competing for top-grade government jobs. If they still hanker after higher education, it is for attempts to get other than higher government jobs and for other reasons. Afterall, it is only a small fraction of the graduates who write competive examinations, otherwise the workload of the UPSC and State SSC would have been, for the preliminary examinations alone, more or less equivalent to the combined graduate examination workload of our one hundred plus universities!

For social status !

Lack of job opportunities for the school leavers, social prestige and status, including access to many public goods and facilities on account of higher education, the urge to keep up with the Joneses the simple calculation of acquiring a marginally better chance of some secure job after University education, relatively better chances of setting up some self-employment project, particularly with State help, the traditional

middle-class Indian value of learning as good in itself and the difficulty faced by many in marrying girls without some higher education are among the factors giving rise to high demand for higher learning. Little private cost of acquiring higher education also increases the demand for it. Even if you delink government jobs and university degress, the social preferences in the 'marriage market' will keep the demand for higher education kicking! Dealing with high and rising demand for higher education (mainly certification) requires scientific manpower planning, vigorous economic expansion and an indepth concern for the content of education for fostering the growth of skills and scientific temper.

For competition !

Much depends on the nature of the political regime which responds in a particular manner to the private demand for higher education, which is justified on the basis of individual private rationality. The nature of the regime also is relevant for determining content and qualitative aspects of higher learning, which have a close bearing on the employability and productivity of the 'products' of higher education. In any case, a society cannot consider education a 'merit' good and at the same time devalue it by making it irrelevant for seeking fortunes in the job market. Furthermore, since organised and unorganised private sector is an important source for providing work and income earning opportunities, it is bound to use the university system as a grading and sieving device in a situation of too many people chasing too few jobs. Even when the degrees are delinked from jobs, they cannot surely be made mandatory disqualifications! Hence job seekers would try to prove their edge over their competitors by obtaining university certification. In many cases, it may work to their advantage, particularly when the returns expected are not much higher compared to those expected by non-degree holders.

And, to meet growing demands !

We have expanded higher education as we wanted to do all those things the colonial regime neglected. It was a relatively simple matter for the regime to satisfy the demand for higher education from the intermediate strata. Additionally, satisfaction of this demand posed no immediate threat to the ruling classes, while kept the lid on vocal urban sections' unrest and helped private sector's recruitment by gradation and sieving. The pressures now emerging for curbing the growth of this demand are on account of the resources crunch felt by the State and the size of higher education going disproportionately beyond the recruitment needs of private industry by a big margin and thus threatening social tranquillity, and the worsening productivity of physical and human investments. But the demand side pressures remain intact and continue to increase. De-linking is no solution to the phenomenon on the demand side, when the regime is reluctant to face head on the task of limiting the size of supply of this public, merit good, leaving an unsatisfied segment.

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Thus while delinking is a non-solution as far as the exploding demand for higher education and its deteriorating quality is concerned, this simplistic 'answer' would introduce some serious distortions in our social, educational, administrative and economic systems.

A case for higher education !

Would earlier selection of main government functionaries right at the end of plus-two stage and job-specific education and training by the employer make for better (more efficient and committed, i e. socially responsive) bureaucracy ? The generalists selected from different academic backgrounds at a more mature age and provided with a common foundation and on-the-job training have not been found wanting in skills, comprehensions, tact and capability to adjust to a variety of callings. Various mid-service training programmes fill in the gaps, re-orient and re-equip the cadres. Such programmes would continue to be required even on the introduction of defence-personnel type catching-them-young selection. Socially responsive attitudes and behaviour are a complex function of many broader variables and relate but marginally to selection procedures. However, a general university education, compared to post-selection education and training brings about a broader and better conscientization, sensitising and development of social ethos. Post-selection training and education are likely to breed greater career-mindedness, conformity, competitiveness and inward-looking protective-defensive sensibility.

Something to envy !

Exposure to the open, more varied, colourful, freer college life, even in our universities with their divergent but generally not-so-cosmopolitan and inadequately catholic environment with many cultural, political and literary cross-currents, provide somethink which the secluded precincts of a service academy cannot be expected to provide. Future civil servants who would be unfortunate enough to miss such a rich and rewarding experience (which certainly can be improved immeasurably by strengthening our higher education by making it an instrument for breeding and steeling a scientific temper with a catholic, creative approach to life and democratic social commitments) can hardly be expected to deliver goods to the masses.

For excellence !

After all, raw civil servants, educated and trained by the government-of-the-day, would hardly be able to acquire knowledge about social theories, philosophies, ideologies, practices and techniques of social

engineering which do not find favour with the 'employer-educator'. Bureaucrats with narrower horizons would be hard put to meet diverse challenges like those of policy advisors, management innovators and trouble-shooters. Even the incentive to pursue excellance during the prime learning period would not be so powerful once entry has been won into a coveted service at such a young age as it is likely to be the case when one is to compete for entry after atleast graduation.

Delinking affects quality

Many other factors may adversely affect the quality of selection under the proposed delinked arrangement. The lower the age at which selections are made, the dimmer the chances for one to understand the full implications of one's occupational choice. Self-actualisation depends to a great extent on the ability to understand one's interests, capabilities and inclinations. But at a younger age, the parental influence may be too domineering to be resisted, particularly in over-patriarchal culture. Thus, the probationers would not have exercised much of their occupational choice and being trained in nothing else would hardly have much possibility of opting out of the service at a later stage. What would be the morale of the people who do not get an opportunity to exercise much of their own discretion in their occupational choice and, being highly specifically trained, would find themselves in an occupational cul-de-sac without operational options?

It has been argued that graduates in many subjects like mathematics, engineering, Sanskrit, etc. do not have much relevance for civil services. This position betrays ignorance of the diverse needs of generalist administration, common foundation and on-the-job training, the mental capabilities built by these subjects, actual excellent performance of civil servants who graduated with these disciplines and an overblown, importance of formal education in certain subjects. In any case, as far as younger, non-degree recruitment is concerned, is it anybody's case that students with certain subjects at plus-two stage should be debarred from competitive examinations for higher civil service examinations? By making such a flimsy plea, the Economic Administration Reforms Commission has shown its prejudices not compatible with the serious task entrusted to it.

The present system of recruitment allows the youth opportunities up to the age of mid-twenties to attempt entry by more than one effort. A lower age would reduce opportunities for fruitful efforts towards higher jobs while overstraining the young with the travails of competitive examinations.

Against social justice

The most serious negative consequence of the delinking move is in terms of social injustice. Who is not aware of the most inequitous nature of our schooling facilities, for various strata of society, for rural, urban and metropolitan areas and for the 'higher' castes and the scheduled castes and tribes? The differences between the good and not-so-good colleges is rather small as compared to the differences which mark schools of various descriptions. Differences among colleges on the basis of high fees are rare, if any. Monopolisation of higher public jobs by the pupils from better and costlier schools will do gross injustice to the chances of vertical social mobility for rural and urban poor and backward communities. It would enhance the 'premium' on admissions to costly "superior" schools and increase gross irregularities in admissions to these schools. Moreover, the influence of family background is very marked at a lower age and in our highly non-egalitation society. The avenues of acquiring knowledge, skills and attitudes offered by a stay in universities would go to diminish the impact of differences in family backgrounds.

Against poor !

The social and family background of civil servants play a part in determining their social sympathies and commitments. Recruits from better-off sections are likely to be less socially responsive than those from middle and lower income groups. Thus lower age, delinked selection would work against the poor and the disadvantaged and would tend to mould the sympathies of administration adversely from social justice angle.

Against equality !

Actually, while pleading for delinking one has not asked questions about those who would neither get selected to higher public jobs nor would get entry into universities (as inducement to do so would supposedly weaken) and nor would find jobs. Delinking proposal is not based on a consideration of the interests of these young people. Education is a great equaliser and restriction of educational opportunities weakens the forces of equity. We may have a situation in which students from poor families, who are first generation undergraduates, may not make as much use of educational facilities as may be done by those from better-off, better-educated families. But social justice requires that the 'productivity' criterion should not overlook 'equity' criterion.

Without rationale !

In fact, partial reforms and ill-conceived reforms are very hazardous. Delinkings is some such move While it may leave the demand for higher education unchanged, it will produce harmful effects on the quality of higher public functionaries, social equity and the morale of the youth struggling for a place under the Sun. It will be a deformed reform—a reform without rationale—which would be counterproductive and would worsen the ills it is aiming to cure.

Table I

GROWTH OF UNIVERSITY ENROLMENT

(Figures in 000's)

Year	Total Enrolment	
1	2	3**
1955-56	294 9	736
1956-57	326 9	801
1957-58	371.5	862
1958-59	427 9	958
1959-60	481 8	1,045
1960-61	556.6	1,030
1961-62	663 7	1,155
1962-63	752.1	1,273
1963-64	842 2	1,385
1964-65	952 2	1,528
1965-66	1066 9	1,728
1966-67	1190 8	1,949
1967-68	1370 2	2,218
1968-69	1566 1	2,473
1969-70	1792 8	2,793
1970-71	1955.7	3,001
1971-72	2065 0	3,262
1972-73	2168 2	3,456
1973-74	2234.3	3,583
1974-75	2363.2	
1975-76	2426.1	
1976-77	2431.5	
1977-78	2564.6	
1978-79	2618.2	
1979-80	2648.5	
1980-81	2752.5	
1981-82	2952 1	
1982-83		
Growth Rates		
1955-56 to 1960-61	13 5%	
1960-61 to 1965-66	14 0%	
1965-66 to 1970-71	12 8%	
1956-57 to 1981-82	9.2%	
1960-61 to 1970-71	13 4%	
1970-71 to 1981-82	3 8%	
1970-71 to 1975-76	41%	
1975-76 to 1981-82	3 9%	

*excluding intermediate

**including intermediate

Source : UGC Reports.

Table III

Educated Unemployment in India

Year	Matriculate		Undergraduate		Graduate		Post-graduate		Total
	Number	Percent	Number	Percent	Number	Percent	Number	Percent	
1953	125	76.68	17	10.42	21	12 88			163
1954	145	76.72	22	11 64	22	11 64			189
1955	164	75 93	26	12.03	26	12 03			216
1957	237	76.09	31	12.70	27	11.07			244
1958	283	72.53	45	12 33	37	10.14			365
1959	344	79.45	49	11.32	40	9 23			433
1960	400	78.75	61	12.00	47	9 25			508
1961	463	78.48	71	12.03	56	9 49			590
1962	353	78 10	91	12.85	64	9.05			708
1963	560	75 78	111	15.02	68	9 20			739
1964	585	72.67	148	18.39	72	8 94			805
1965	580	68 88	176	20 90	86	10 22			842
1966	619	67.50	204	22.25	94	10 25			917
1967	714	65.58	252	23 18	121	11 14			1087
1968	810	61 88	324	24.75	157	11 99	18	1 38	1309
1969	910	59.59	401	26.26	190	12 44	26	1 70	1527
1970	1101	60 46	443	24.33	245	13 45	32	1 76	1821
1971	1296	56 50	605	26 37	354	15 43	39	1 70	2294
1972	1485	56 83	664	25 41	421	16 11	43	1 65	2613
1974	2278	54.58	1086	26.01	746	17.87	64	1 53	4174
1975	2641	56 14	1228	26 10	772	16.41	63	1.33	4704
1976	2820	55.24	1255	24.58	926	18.14	94	1.84	5105
1977	3082	53.75	1472	25.68	1074	18 73	105	1.83	5733
1978	3262	53.94	1533	26 68	1124	18 59	108	1.70	6047

Source : 1. Fact Book on Manpower, IAMR, New Delhi, 1963

2. Employment Review (Various years) DGE&T, New Delhi.

Table IV

Public Expenditure per pupil in India

	Primary	Middle	Secondary	Universities & Institutions of Higher Education	Colleges General	Colleges Professional
A. At current prices						
1950-51	19 9	37 1	72 9	1905.6	231.2	779.2
1960-61	27.6	40.5	91 7	2425.2	302.4	813.4
1970-71	57.0	84.9	168.4	4141.2	421.6	1179.0
1975-76	95.9	144 2	257 7	5993.6	572.5	1539.9
B. At constant (1970-71) pricess						
1950-51	41.9	78.1	153.5	4011 7	486.7	1640.4
1960-61	50.1	73.5	166 4	4581 1	548.8	1476.02
1970-71	57.0	84 9	168 4	4141.2	421.6	1179.0
1975-76	55.2	83.3	148.9	3664.5	330.9	890.1

Table VII

Selected I.A.S. Candidates According to Qualifications

Degrees	No. of Candidates selected
1	2
B.A/B.Sc/B. Com	31
M.A./M.Sc/M.Com including B. Tech/M Tech	246
MBA	15
M. Phil	14
Ph.D	5
MBBS	6
Total	317

(continued from page 10)

participate in social production. While conceding that home-based production provides flexibility for women in their work habits, factory production by arousing and strengthening their collective consciousness also broadens their *weltanschaaung*.

In this context the role of the trade union, women's organisations and the state needs to reviewed. The trade union movement at this stage has largely confined itself to the organised sector though there are instances in recent times where the national federations are also covering the small sector and those designated as the unorganised or informal sector. In terms of the enormity of this unorganised sector, there is much to be done by the trade unions. A recognition of their inadequate coverage as well as the recognition of the complexity of the issue involved, together with an understanding of the objective constraints in organising women by the national trade unions themselves, would go a long way in clearing doubts about the patriarchal and heirarchical orientations of the national trade unions and their limited understanding of forms of struggles.

The role of the women's organisations should not merely be that of charitable or welfare organisations but should be one of active mobilisation of women. In this there exists a role for the media and pressure groups in changing the perceptions of women about their work and status.

Monitor how labour laws work !

The role of the State in these issues cannot be minimised. Apart from all the legislations, monitoring and implementation suggested earlier, the State has to play other positive roles. Planning in this country has very little to offer to the informal sector. Also there is an enormous discrepancy between legislation and implementation. Particularly in the sphere of social legislation, a different frame-work ought to be thought of. Even within the existing frame-work, a more imaginative approach to monitoring labour laws is likely to be fruitful as, for instance, linking up the granting and renewal of licences of export quotas with the implementation of labour legislations. The state is primarily responsible for ensuring legal rights to women with regard to access to property, in particular, land and other productive assets as well as credit.

Without an enlightened and committed state, all other efforts to promote women's status is only a battle half fought.

Progress of IRDP

AGAINST THE TARGET of 15 million families to be covered during the Sixth Five Year Plan under the Integrated Rural Development Programme, the coverage upto January, 1985 has exceeded 15.4 million families. The coverage of SC|ST families has also exceeded by 8 3 per cent in the same period taking the total to 5.9 million against the targeted 4.5 million.

Out of the Sixth Plan outlay of Rs. 1500 crores, the utilisation upto January 1985 has been Rs. 1509 crores and the credit mobilisation touched Rs. 2838.74 crores. The per capita investment in terms of subsidy and credit has risen from Rs. 1642 in 1980-81 to Rs. 3201 in 1983-84.

Delinking is purposive!

Virendra Agarwala

Talking of the malaise that has reduced Indian education to a shamble the author says education need to be made vocational and purposive by delinking the general run of jobs from the requirement of a degree. It is felt that students aspiring for government jobs can be selected after plus-two and given training in specialised professional academy on subjects relevant to their jobs. He emphasises the role of quality education for enriching human personality by linking that with the current roots of India through a climate of commitment and national consensus on what is good education.

Education is again in the news, with Prime Minister Rajiv Gandhi promising to reform the system. As we wait for him and his aides to unravel their scheme, it is only proper that the rest of us discuss the malaise that has reduced Indian education to a shamble. The subject is not new and it has been discussed for almost a Century. New difficulties have, of course arisen and the old ones have worsened greatly since. Numbers were, for example, not so frightening then. Our predecessors did not have to worry about the medium of instruction at the college and the university stage. The corpus of knowledge was relatively limited. Teachers were illpaid but their place in society was assured and they need to be coerced to take interest in their work. Unionism was unknown in the teaching profession. Resources were limited but not so abysmally inadequate.

Shortfall in achivements

Virtually very segment of India's educational programme has been reporting shortfalls in achievements for one reason or the other. For instance, the scheme of universalisation of education continues to run into problems of heavy drop-outs and the consequent lapse into illiteracy. This is because of the inadequacy of the effort made by educational planners for tackling the specific socio-economic challenges posed by the rural community. Educational surveys have no doubt highlighted the social factors which are responsible for the negative responses at the grassroot level of educational development. The catch is in the insufficient follow up on these findings. What precisely are the difficulties in attending to the factors causing drop-outs ? The rub lies in the fact that the content and quality of the education imparted is poor at the school as well as the plus-two levels. It is largely because of this that those who come out of school or plus two courses do not find it easy to get jobs. The standard of their competence is well below the expectations of employers and this explains in part why the university degree has come to be regarded as the basic minimum for any job despite the absence of any relationship of the degree course and the type of job that is being offered.

Curbing craze for degrees

Any discussion on delinking degrees from jobs would remain meaningless unless the government at the Centre takes note of certain fundamental issues, the resolution of which does not lie within the competence of the school or the college. There is a great point in the contention of some of the academics that it is not the duty of the school or college to supply a readymade skill for industry or the government. What has to be ensured is that institution and support by industry and government of arrangements for exposing student to real life situations in a factory or a government office besides participating in the provision at the relevant educational levels of training as the means to absorb the skills developed in this manner. This will automatically make education purposive. Given the improvements in the quality of education, the organisation of a new system of exchanges between

academic institutions and employers will certainly cure the craze for a degree besides helping the universities becoming the centres of excellence as they should be.

Universalisation of education still far off

There has been no dearth of committee reports and experts' suggestion on reforming educational system but they do not seem to have done much good. Will the new government's professed resolve to tackle the subject in earnest produce results ? We do often boast of the third largest scientific manpower but at the same time we have the world's largest collection of illiterates. School facilities have so expanded that the number of educational institutions increased from 1,65,000 in 1947 to 7,40,000 in 1982. The enrolement at all levels rose from 147 lakhs to 1200 lakhs. But the goal of universalisation of education is still far off. Apart from the fact, that 15 per cent of the children do not go to school, only 40 out of 100 enrolled reach class V and only 20 per cent remain by the time they reach class VIII. Most of the unenrolled and the drop-outs belong to the weaker sections. Rural communities engaged in farming see no purpose in giving their children the type of education which will make them shy away from working with the hands.

We need to plead for a visible link between the curriculum of rural schools and the economic activities prevalent in the locality, introduction of the kind of work ethics propounded by Gandhiji to stimulate demand for schooling. In urban areas, the resources are not available for providing more schools, therefore, the private sector fills the gap between demand and supply, providing standard education rather than a cheap one. Vocationalisation of education is another crying need of the hours. The vocational courses are not popular because they are considered inferior and the demand for such courses in the employment market is also unpredictable. A major weakness of the programme is inadequate preparation of the senior secondary schools to evolve and manage vocational courses. We also have to provide a well-designed course structure and supportive instructional material.

Scenario of higher education

In the field of higher education, the scenario is more depressing. The pressure on colleges is on the rise, disproportionate to the facilities that can be offered with the result that quality has suffered and there is unrest on the campus. There are about 35 lakh students beyond the plus-two stage. There are more than 125 universities and institutions which award recognised degrees. There are about 5100 colleges affiliated to the universities. More than 1000 colleges are likely to come up during the next 5 years. Not more than 15 per cent of the students get 50 per cent marks after three years of college education. It is a wasteful system wherein 85 per cent of the students, come under the category of rejects. It is true that most of the colleges have become mere teaching shops. The unchecked expansion in higher education and particularly the policy of recruitment of college teachers has been a disheartening process. The number of college teachers has risen to 2,11,000 and every year 6000 teachers get into the system. Not enough attention is being paid to their proper selection.

Delinking degree from job

It is against such background that the idea of delinking the general run of jobs from the requirement of a degree has been mooted. It is felt that students aspiring for government jobs can be selected after plus-two and given training in a specialised professional academy on subjects relevant to the tasks they will be called upon to discharge. A similar arrangement is suggested for other professional courses including for recruitment by banks and other public sector undertakings. This will help relieve the pressure on college which can then cater to those genuinely interested in pursuing an academic or research-oriented career. It will also prevent the mushrooming of teaching shops which offer degrees' to students who need it as passport to a job.

Elementary education needs priority

The national educational pattern (10+2+3) stands accepted at least for the time being. The main priority at the moment is universalisation of elementary education. What we need is bold action to modify the existing staffing formula at the primary level and release sufficient resources for primary school to improve teaching staff, buildings and equipment as well as reading material. The rural and backward regions deserve special attention. Education needs to be socialised upto the middle stage. This may mean common junior schools, with classes from 1 to 8 and thereafter the senior four year schools with classes from 9 to 12. In the junior schools, fees should be charged according to the income of the parents.

Ethics for teachers

There is an urgent need for a code of ethics for teachers because the society expects them to be the embodiment of all virtues. A strong cadre of qualified and trained educational administrators should emerge out of the teacher community itself. Politics must be kept out of the portals of educational institutions and no political party should be permitted to exploit the students or the teachers for their party ends. They need to organise themselves strictly on non-political lines. To make the system move, we need a climate of commitment and above all a national concensus on what is good education. There is a need for stress on fundamentals—which could help the younger generation receive quality education for enriching

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Annual plan for 1985-86
Salient features

Yojana Correspondent

THE CENTRAL PLAN FOR 1985-86 has been fixed at Rs. 18,500 crore as against Rs. 17,351 crore in 1984-85 showing an increase of 6.6 per cent.

The Central assistance to State Plans in 1985-86 is being increased to about Rs. 6,000 crore as against Rs. 4,313 crore in 1984-85. This marks an increase of 39 per cent over an increase of 13 per cent provided last year.

The States have been authorised to go in for higher market borrowings to the tune of Rs. 1,600 crore, showing an increase of 20 per cent over 1984-85. Additional resource mobilisation efforts of the states will, however, be known after the State plans are finalised.

Outlays for Union Territories

Plan outlays for Union Territories have been fixed at Rs. 639.56 crore as against Rs. 558 crore in 1984-85. This includes an additional amount of Rs. 61.56 crore to be mobilised independently by Union Territories.

During 1985-86, priority will be given to completing projects already under implementation rather than taking new projects.

Rural development, agriculture and education

For agriculture, agricultural research and education, Rs. 790 crore has been provided in the Central Plan to augment the overall efforts of the State governments. Besides, a provision of Rs. 165 crore has been made for setting up fertilizer factories at Guna and Aonia based on Bombay High gas.

Rural development has been provided Rs 932 crore. Another Rs. 800 crore has been sanctioned for projects under the Rural Landless Employment Guarantee Programme. In 1985-86, the Rural Employment Guarantee Programme will have an outlay of Rs. 400 crore.

A provision of Rs. 221 crore has been made for education in the Central sector including provisions for new incentives like re-structuring of the education pattern and making education free for girls upto higher secondary level all over the country.

Family welfare

The family welfare programme gets an outlay of Rs. 500 crore. This is intended to be utilised for an imaginative family planning programme to achieve a net reproduction rate of unity by the year A.D. 2000.

The allocation on provision of rural water exceeded Rs. 925 crore in the Sixth Plan compared to the original outlay of Rs. 600 crore during the Plan period. This enabled the States to cover about two lakh problem villages during the Sixth Plan.

Science and technology

Science and technology have received a special thrust for modernisation and development with an outlay of Rs. 1,068 crore provided for ministries of science and technology, environment, atomic energy, space, ocean development and electronics.

Energy sector

The department of power has been provided an outlay of Rs. 2,090 crore against Rs. 1,446 crore during 1984-85.

In the energy sector, there is need for a gradual transition from the present dependence on oil to coal and electricity in the medium term. By the end of the Sixth Plan, the additional power generating capacity of 14,000 mw would have been added indicating 50 per cent increase over the capacity at the commencement of that Plan.

The department of coal gets Rs. 1,102 crore to step up the production of coal from 147.5 million tonnes in 1984-85 to 158.50 million tonnes in 1985-86.

An outlay of Rs. 3,261 crore for the department of petroleum has been provided in 1985-86. The crude production rose to 29.4 million tonnes in 1984-85 from 11.4 million tonnes at the beginning of the Sixth Plan in 1980-81. The Gas Authority of India Ltd. set up recently gets Rs. 100 crore.

The department of forest and wild life has been allocated Rs. 54 crore. The department of environment gets Rs. 36 crore which includes Rs. 10 crore on the project of prevention of pollution of the Ganga.

Welfare of SCs and STs

The various welfare programmes for Scheduled Castes and Scheduled Tribes have been provided Rs. 207 crore under the Central Plan. Besides, a provision of Rs. 9 crore has been made to rehabilitate the refugees from Sri Lanka during the year 1985-86.

Information & Broadcasting

An outlay of Rs. 110 crore has been allocated for information and broadcasting in 1985-86. It is estimated that commensurate with the government's programme to make television programme available to 70 per cent of the population, the number of TV transmitters would go up to 180 by March 31, 1985.

20-Point Programme

Further to accelerate the implementation of the 20-Point Programme, the total amount allocated for the programme in the Central Plan is Rs. 4,900 crore for 1985-86 against Rs. 4,141 crore in 1984-85, thus showing a step up by 18.3 per cent over the last year.

New thrust to implementation

It is proposed to make certain changes in the administrative procedures to facilitate quicker implementation of the plan projects during 1985-86. It is axiomatic that proper implementation of the Plan requires not only financial allocation but also better project formulations.

Transfer of resources to States

The 1985-86 budget provides larger transfers to States in terms of the recommendations of the Eighth Finance Commission. The grants to States goes up from Rs. 518 crore in budget estimates of 1984-85 to Rs. 1,215 crore in the budget estimates for 1985-86.

Non-Plan expenditure

A total non-plan expenditure in 1985-86 is estimated at Rs. 32,786 crore against Rs. 29,740 crore in revised estimates for 1984-85. This includes a lump sum of Rs. 300 crore provided for payment of additional dearness allowance to the Central Government employees.

Defence expenditure is placed at Rs. 7,686 crore. Interest payments are estimated at Rs. 7,075 crore. A provision of Rs. 1,100 crore has been made for food subsidy, Rs. 1,200 crore for subsidy on domestic fertilizer and Rs. 601 crore for subsidy on imported fertilizers.

The Sixth Plan ended towards the close of the financial year 1984-85 with its outlay having gone up to Rs. 1,10,000 crore at current prices against the envisaged Rs. 97,500 crore outlay at 1979-80 prices. Thus there has been a shortfall in real terms.

Other highlights

Other highlights of the budget for 1985-86 relate to a comprehensive insurance scheme designed to cover all crops and the existing price support operations for wheat and rice to be extended to other important crops like oilseeds and pulses also. This is in terms of the government policy to provide remunerative prices to the farmers. The crop insurance scheme will have a built-in insurance cover for all crop loans. The budget includes a plan provision of Rs. 4 crores for the crop insurance scheme which intends to protect farmers from losses caused by draught, flood, frost, cyclone, pest infestation, plant diseases, riots and strikes.

The budget has introduced a rural social security scheme to cover the risk of death by accident of earning members of poor families of landless, small and marginal farmers, traditional craftsmen and others covered not by any insurance scheme or workmen's compensation scheme A sum of Rs. 3,000 will be paid to the dependents of the deceased. To begin with, the scheme is being introduced in 100 districts in the country.

The budget for 1985-86 levies new taxes to yield Rs. 547 crore and leaves a record uncovered deficit of Rs. 3,349 crore.

Besides abolition of the Compulsory Deposit Scheme, estate duty, licence requirement for radio and TV sets, income-tax exemption limit has been raised to Rs. 18,000 from Rs. 15,000 in 1984-85 and bonus limit revised to Rs. 1,600 from the existing Rs. 750. Wealth-tax exemption has been raised to Rs. 2.5 lakh from Rs. 1.5 lakh. Pension limit of Rs. 1500 has been dispensed with and death-cum-retirement gratuity raised from existing Rs. 36,000 to Rs. 50,000. For the purpose of pension, dearness allowances upto the price index level of 568 will be considered part of the basic pay from 1985-86 onwards.

A number of reliefs have been provided in the corporate sector to accelerate the pace of all round growth. MRTP limit has been revised to Rs. 100

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TOWARDS SOCIAL REVOLUTION
a Case for Economic Democracy -
VASANT SATHE

A Serialisation 17

The Alternative (continued)
Conclusion

The question regarding the proposed model that most people at decision-making points or in positions which influence the course of economic activity are bound to ask is · How does the solution help their immediate personal or group interests ? To a realist, the only motivating consideration is how to make the biggest pile in the shortest time and the easiest manner by using the levers of power that he may possess or have access to. The next objective is to use the acquisition of money to gain further power. This alone is wisdom and pragmatism and the sole motivational force as far as a realist is concerned, whether in the economic sphere or in the political sphere. As a realist, he undoubtedly knows the true value of lofty thoughts and utterances which have to be used for public consumption. He knows how to play upon religious sentiments and how to apply and insert quotations from spiritual men and leaders.

Hence, to the vested interests who have developed a stranglehold on the whole economic life of our country, thinks to their hoards of black money, the thesis that I am propounding is not likely to be acceptable. The same will be true of the vested interests in the bureaucratic administration, in the public sector and in the higher echelons of political power.

But, even to these vested interests, I want to show even from the most absolute, crude, realistic and practical point of view that in the ultimate analysis, particularly in the political sphere, the existing order does not serve their interests. When everybody thinks of grabbing and looking only for personal gain at every stage, our vision becomes narrower and the gains also become smaller. In the hope of becoming the prime minister of a country by parochial considerations as a 'practical' man, one can only think in terms of becoming the leader of a small region. Further, the position may also deteriorate and one may become the leader of only a small community or group. In the process of deterioration, the other man also becomes equally narrow and the strife and clash between these narrow forces would inevitably lead to disintegration.

One factor which is both significant and pertinent throughout our history is that India has been great only when it thought in terms of a larger perspecive, i.e. a universal perspective, whether in its Vedic thought of Vasudhaiva Kutumbakam or in Buddha's thoughts propagated during the period of Ashok and thereafter. Whenever in the name of pragmatism, people and kings decided to fight among themselves, they were always overpowered by forces from outside. This is true even today. Politicians are willing to stoop, just for the sake of power, to support regional, fissiparous, linguistic and sectarian forces, knowing fully well that in front of our own eyes in the very recent past a neighbouring nation got divided. Yet, blinded by narrow personal interests, some politicians are willing to appeal even to the armed forces to take sides on communal lines, and this seems to be justified in the name of pragmatism and practical considerations. If this is not suicidal, then really we would not know what is

On the political plane, the realists would divide the country. On the economic plane, they would permit the imbalance and distortions to grow, allowing the ocean of poverty along with the army of unemployed to swell, as if waiting for the day when the tides would burst forth in a deluge.

Anyway, I know, I cannot appeal to the vested interests, who probably, in spite of themselves, may not be able to free themselves from the gilded cage in which they are imprisoned. I am, therefore, trying to appeal to the intelligentsia and to the younger people who are still comparatively free and who are not yet drugged or poisoned by the 'practical wisdom' of acquiring black money. I want to appeal to those who still feel that we can and we must survive as a nation,

that we can bring about an all-round growth of our people, that along with political democracy, we can introduce a structure of economic democracy, creating adequate opportunities of growth for all our people, that we can administratively create conditions which would allow the growth of industries, ensure productive activity at all levels and improve the quality of life of our entire people, giving scope for development and growth in all fields including culture, art, literature and sports. My appeal is to those who have not only the confidence but the will, even in the name of pragmatism and realism, to think in terms of all-round growth of our people and not the growth of only a few at the cost of many. I want to appeal to those who are willing to see, even from a selfish point of view, that when the growth of the whole nation takes place, there are some opportunities for every individual and there is greater satisfaction of achievement. It should not be difficult for any rational man, even with ordinary common sense, to recognise this.

On the one hand, there is the tremendous possibility of national growth in every field, creating new opportunities and satisfying the creative urges of the entire people, raising the strength and honour of the whole nation high in the eyes of the world on its intrinsic merit and, on the other hand, the spectre of disintegration and deterioration in the name of pragmatism and the growth of the proverbial 'crab cult'. (You will never find a basket of crabs covered because one crab always pulls the other crab down, and there is no danger of their escaping). This cult would not only destroy the integrity and nationhood of our country but would once again enslave our people, if not politically, under a new kind of economic imperialism.

When nationalism gets diluted and aggressive regionalism grows, this form of regionalism provides an outlet for the frustration, disappointment, disillusionment, and anger of the people, particularly the youth. It may be that a catastrophe may not befall the nation just today or tomorrow and we may continue to drag on, while the poison that is seeping through the entire body politic will keep on erupting in the form of the Assam agitation or 'Khalistan' or Telugu Desam. The people would become tools in the hands of political organisations. If we keep on ignoring these happenings as routine, some day it would be too late.

Today, we have a few individuals, or to be very honest, at least one individual who can raise the nation and the people above all narrow considerations and elevate it to the higher plane of national unity. It is not easy to find people who can command uniform respect and appeal from the entire people of the country. In such a situation, i.e., in the absence of a national leader, leadership tends to rely on narrower and smaller considerations. Also, in such a situation, it is true that national leadership will be thrown up in some other form or in some other name and one can always live on such a hope. But this is the attitude of a pessimist. Why should we leave it to chance when all those who are capable of doing something useful can prevent the disease of disintegration from spreading? Why can't those who are capable of thinking rationally get together? If they have any hesitation, they should be made to get together by the youth of the country in order to find a method to enable the achievement of all-round growth and development of the country.

Sometimes, I feel that the youth from all the universities and colleges of India, even those who are without a creative opportunity having come out of the portals of the universities, instead of breaking the window-panes of their colleges or universities, or burning buses to show their anger, should really get together and ask all political leaders and thinkers such as economists, planners, journalists and engineers to come together. If necessary the youth should lock them up and should not release them until they have found a democratic solution which would maintain the integrity of our country and ensure all-round growth within the democratic framework. If ever an agitation was needed, it is such an agitation. If not, the rage of the youth shall continue to express itself in local outbursts with no result.

I am, therefore, appealing to every man who has a thinking faculty and who has not yet surrendered it to the nearest godman. I am appealing to every thinking man who has confidence in the intelligence of the human being and who knows that the human being, even as a part of the universal energy, is capable of mastering the environment, piercing space, fathoming the depths of the ocean, conquering the coldest regions of Antarctica, landing on the moon and probably colonising it, building space-stations, prolonging life through genetic engineering and thus seeking knowledge and harmony with the entire universe. My appeal is to the person who refuses to surrender and who has confidence in his capacity to overcome all burdens, to climb Mount Everest and to walk the length and breadth of the Himalayas—it is to this category of men and women that I address myself with the confidence that if they are determined, they can shake the people out of their lethargy and complacence and put an end to the dreaded diseases of personal aggrandisement and narrow selfish interests and greed. It is these people who can confront the so-called pragmatists and realists, who are nothing but greedy monsters and expose their true form by tearing off the masks of hypocrisy from their faces. It is these persons of reason and courage, who by the very force of their rationality, can break down narrow walls and raise the people to wider horizons. It is to such persons, who can still listen to and be roused by the prayer of Rabindranath Tagore, that my appeal lies.

> Where the mind is without fear
> and the head is held high;
> Where knowledge is free;

Where the world has not been broken up into
fragments by narrow domestic walls;

Where words come out from the depth of truth;

Where tireless striving stretches its arms towards
perfection;

Where the clear stream of reason has not
lost its way into the dreary desert sand
of dead habit;

Where the mind is led forward by thee into
ever-widening thought and action;

Into that heaven of freedom,
my father, let my country awake.

The most important aspect of the economic democratic system suggested here is that it not only ensures individual freedom but positively encourages it. For example, it gives recognition and full scope to individuals engaged in trade and commerce; it also gives full freedom and encouragement to people engaged in self-employed productive activity, and further, it ensures the protection of the freedom of those who contribute their labour in the production of goods and services. It, in fact, creates equal opportunities and a sense of participation and partnership for all, which is not imposed by any particular group or party. It is only under such a system that full freedom can be ensured. This is how the system fulfils the objectives of an economic democracy and is different from the communist model wherein totalitarian and authoritarian control is exercised by one single party over the entire economic, social and political life of the people. In our model, as a matter of fact, there is the least interference from the government (to whichever political party it may belong). The government would have practically no role except to oversee the working of institutions according to the in-built norms of the system. The duties of the government would be to serve as a catalyst so as to remove the difficulties if they arise in any field and to assist in the solution of problems rather than to control or interfere at every stage of the economic or social activity of society. In fact, under this model the adage 'that government is best which governs least' would come true. The role of a government in a democracy must not be to govern but to promote growth. In this way, this model does away with the evils of the capitalistic structure which is based on the inherent exploitation of one section by another.

Hence, all persons who truly believe in the freedom of the individual will find no difficulty in accepting the foregoing model. Only that section which has developed vested interests, i.e., domination over both the industrial and trading sectors, and which has generated tremendous amounts of unaccounted wealth will feel disturbed, because its right of exploitation will be threatened by this model. The members of this section will definitely shout and cry themselves hoarse, and because they have control over certain mass media, they might even try to misrepresent and create misgivings about the proposed model.

Similarly, those who have developed vested interests in the administrative and the bureaucratic machinery of the government and who have tasted the blood black money will also oppose this model because their power of control, licensing and fresh methods of obtaining a share of the unaccounted wealth will be curtailed. They will, therefore, definitely find some very intelligent—sounding arguments, grabled with all sorts of jargon, to condemn this democratic model by saying that it may be good but it is not practicable or practical, meaning thereby that realism prevails when the exploiters are allowed to exploit.

Last, but not the least, are the vested interest in the political sphere. They would not like this model, because a very few among them, but those who have enjoyed real power, know the advantages of getting easy money from the vast source of unaccounted wealth accumulated in the hands of a few. So, all the practical men in the political, administrative and economic sphere, who want to benefit from the existing economic spheres, who want to benefit from the existing economic structure, will definitely try to find some fault with this model of participatory economic democracy and some of them would even try to condemn it as unrealistic when they run out of valid arguments.

But the fact is that it is the experience of the politicians present that no amount of money collected and spent by them can win them votes and ensure their continuance in power. The industrialists and the trading community also recognise, in the heart of hearts, that all the unaccounted money that they may accumulate, all the skyscrapers that they may build, all the ostentatious wealth that they may flaunt will be of no avail if the ocean of poverty and unemployment bursts in on their small island of plenty. The whole edifice would then be a delusion. They will also realise that these fears and apprehensions are not false because anyone can see the eruptions that are taking place in various parts of India although in different forms.

Unfortunately, because the poor exploited masses are not organised and also because politically oriented people are not able to look beyond their self-interest, very often the eruption of the anger and frustration of the people, instead of taking a right direction to bring about an economic change and a structural change in the economic life, gets diverted and results in emotional outbursts. Such a situation is used by the vested interests to place power in the hand of a military junta which would not only keep the common people suppressed and at bay but would also allow the vested interests in the economic field to

grow freely by giving them the shelter of gun. Because of the exploitative potential available in such a situation, even the multinationals and the neo-colonialists or imperialists support such a military junta. This, then, can be the worst tragedy if and when political sagacity fails.

It is in this area that thinking men of every political shade need to put their heads and minds together because the deterioration of democracy into dictatorship is a phenomenon which is quite common and has been experienced even nearer home All short-sighted policies of encouraging fissiparous and divisive forces would therefore only weaken the national fibre and endanger democracy itself. Hence, the central theme of this thesis is to appeal to every thinking member of the society, at least to agree to think and to discuss, to debate, to have a dialogue, to find out with an open mind what is wrong with our system, why distortions are taking place and why we cannot bring about a balanced growth of our people, and at the same time, ensure freedom and full opportunity of growth to all members of the society. Why can't there be a will or determination given the premise that all members are basically good, they are all patriotic and they all desire the good of the whole society ?

A total economic war, like any other total war, requires total mobilisation of all human and material resources. There can be no question of leaving any loopholes or allowing any cracks to develop in the democratic structure. It has to be appreciated that democracy cannot succeed without discipline like the rule of law in the economic field. We can no longer tolerate a system of virtual loot and exploitation by the few of the many under the cover of democratic freedom. There can be no half-hearted measures and to compromise with the vested interests will only lead to the perpetuation of the system of exploitation, and all our efforts to establish a new socio-economic order will backslide.

There is no dearth of talent in our country We have experts in all fields as has been repeatedly proved. Most of the talent, unfortunately, is being employed by the private industry to manufacture non-essential, non-priority goods and to augment profits. To possess wealth in any form is to wield economic and even political power and also to acquire social status. This has destroyed traditional values. The greatest harm has been done in the sociological field where we see poverty pushing the poor to the lowest, subhuman depths. Hence, the greater the need to change this corrupting system by going the whole hog

Here, I would like to reproduce the observations of the famous economist and a friend of India, Gunnar Myrdal :

I shall not here enlarge upon the exemplification of how social justice and economic growth are not, as some biased economists have believed, antagonistic but how instead radical social and economic reforms are necessary for sustained growth. But I have wanted to stress that in India there is no dearth of intellectual capacity of the highest order. All the arguments for my thesis, and the practical policy proposals in line with it, have been authoritatively stated and developed by supremely competent persons in leading positions in their field. *It is only the implementation of their* reform proposals that has largely been missing.

Prime Minister Indira Gandhi has enjoyed personal power that even Mahatma Gandhi and her father, Jawaharlal Nehru, never had. This is largely because of her proven political ability. In 1971, her inspired and successful leadership in the conflict with the military junta that then ruled Pakistan contributed to the process. But an equally important contribution was made by her programme of radical social and economic reforms. Again, India has now arrived at a crucial point in its history, where its people and all their friends in the whole world have a right to nurture hope. She must be well aware that radical phraseology and cosmetic political actions are not enough any longer.

Another source of hope is the multitude in India of highly competent intellectuals and professionals among whom I also reckon many of India's industrial leaders who see the truth. What we must hope is that they will grasp the new opportunity and courageously bury petty and short-term private interests and jealousies and join together in a national movement for justice and growth.

Hence, let us have faith in our people and let us utilise good men from every walk of life without any prejudice, and let us judge them not by their protestations but by results. And, above all, let us mobilise all available human and material resources and harness them for the welfare and benefit of the people and the nation.

While thinking of providing the structure of economic democracy, one very important attitudinal factor needs to be taken into consideration. In a political democracy two or more political parties can provide more efficient alterantives to the people, although it is not necessary that they should represent diamerically opposed ideological patterns. The political parties or forces are not enemies who are out to undo each other by hook or by crook. Instead, given proper conditions they can have mutual respect for each other's honesty, integrity and even patriotic nobility. While competing with each other, they can adopt an attitude of presenting a better performance, thereby earning the confidence and support of the people rather than by denigrating each other. Thus, a wholly new and healthy ethos could be developed in the political field when it is realised that it is in the interest of all people that a civilian democracy survives only when economic democracy is assured.

Therefore, given the will, there is no reason why, even keeping the most selfish personal interest in mind, we as a united nation should not be able to muster out energies and collectively pool our resources in order to build a nation which will provide free and full opportunities for all people, thus ensuring balanced growth.

With everyone having productive work, the whole concept of growth of the GNP will undergo a sea-change and all the discussion in terms of 2 per cent or 3 per cent or even 5 per cent growth rate will become irrelevant.

I have ventured to think out and project this model of economic democracy as a student of economics as well as of political science who has been aware of the classical theories of economic growth, evolved over the years, in the Western world, who has seen how the theories propounded by Karl Marx found their expression in the Communist experience and experiment in the Soviet Union and other countries and who has attempted to find out that for the developing countries which have secured political independence and which value individual human freedom and at the same time create conditions for a balanced and faster economic growth of the whole society.

I have found myself on a common wavelength with the writings and thoughts of two eminent authors, namely, Gunnar Myrdal and Raul Prebisch. I have quoted their views and comments in the preceding pages of this work. I would like to quote a few more of their views emphasising the need for fresh thinking and the need for a change in the economic system.

Gunnar Myrdal in "Economic Theory and Underdeveloped Regions".

In this epoch of the Great Awakening, it would be pathetic if young economists in the underdeveloped countries got led astray by the predilections of the economic thinking in the advanced countries, which are hampering the scholars there in their efforts to be rational, but would be almost fatal to the intellectual strivings of those in the underdeveloped countries. I would instead wish them to have the courage to throw away large structures of meaningless, irrelevant and sometimes blatantly inadequate doctrines and theoretical approaches, and to start their thinking afresh from a study of their own needs and problems. This would then take them far beyond the realm of both outmoded Western liberal economics and "Marxism".

Raul Prebisch in "Towards a Theory of Change"

In embarking upon this outline sketch, I must make my goal perfectly clear. I am seeking a synthesis between socialism and liberalism or, if preferred, a version of socialism based on the freedom of the individual and on new patterns of social coexistence.

Socialism, inasmuch the State will have to shoulder one responsibility of fundamental importance, among others : the responsibility of democratically deciding how social use is to be made of the surplus in order to accumulate the fruits of technical progress much more intensively and distribute them equitably.

And liberalism, in so far as the discharge of this responsibility must be compatible with the exercise of economic freedom, both because of what it means in itself and because it is essential to political freedom and to the human rights inherent therein.

Rául Prebisch in an Interview

SOUTH : Would you agree with those Latin American economists who say that the effects of monetarist policies tend to be the exact opposite of their declared aims ?

RAUL PREBISCH : I think that this monetarist conception is a complete aberration and this is what I am trying to demonstrate in my present writings. This conviction is now absolute, which was not the case back in 1955. Of course, in CEPAL we used to say that inflation was not only a monetary phenomenon, but also a structural one. But what to do ? It is quite clear that even in the United States they do not know what to do.

SOUTH : Is the problem the same in the United States and in the periphery ?

R. P. : I wouldn't say it is. But the question of what to do in these countries of the periphery has led me to the conclusion that the problem cannot be solved without a fundamental transformation of the system. (Emphasis added.)

SOUTH : You recently stated that the capitalist model adopted in Latin America and other Third World countries does not work. Why ?

R. P. : That is the thesis I am now trying to demonstrate. It is imitative capitalism. We take the techniques of the centres, their patterns of consumption, their ideas, their ideologies, their institutions, into this social structure of ours which is completely different to the structures of the great countries from where all these elements have come. This gives rise to a whole series of contradictions, which lead us to the conclusion that it is impossible to develop our countries in the image of the centres.

The model proposed by me comes closest to the concept of economic democracy that alone can make political democracy complete and meaningful. However, if any improvements or modifications can emerge from a free discussion among thinking men, I will be only too happy.

Ultimately what is important is that relatively quick results must be achieved. The suffering people cannot remain patient for long. The results must be capable of providing a sustained and healthy growth of the socio-economic life of the entire society. What is needed, therefore, is a mechanism, having its own corrective methods, like the human body wherein the need for outside interference in the form of medicine should arise only in case of illness or disease.

I have tried to evolve a model of economic democracy to dovetail with the political democratic system that we have adopted. This model may not be of advantage to dictatorships or to countries which have already reaped the benefits of capitalism to reach a stage where the entire society, or at least a major part of it, is benefited by the capitalist model of exploitation because the exploitation is mainly of the outsiders. But probably, sooner or later, even those economics will have to accept a system wherein the principles of equality will become a reality rather than remain only as a liberal theoretical ideal.

I conclude this chapter by recalling the ancient Sanskrit saying (which is very relevant to the people responsible for creating suitable social and economic conditions, who are called the planners). It runs as follows :

Amantram Akshram Nasti

Nasti Moolan Anaushadam

Ayogyah Purusho Nasti

Yojakah Tatra Durlabhah.

(No word is unholy; no herb is without medicinal quality; no man is unuseful; it is only a planner or organiser who is difficult to find.)

(Next issue : Prospects for the Future)

(*continued from page* 22)

crore minimum from the existing Rs.,20 crore. Besides, a number of companies have been delicensed to cut procedural delays in areas where additional capacity utilisation is required. To promote the growth of small scale industry, the ceiling of investment in plant and machinery has been raised from Rs. 20 lakh to Rs. 35 lakh. In respect of ancillaries the ceiling is raised from Rs. 25 lakh to Rs. 45 lakh.

Donation to political parties or for political purposes by companies from their profits has been permitted. Accordingly, the Companies Act will be amended suitably. This is intended to curb generation of black money to a great extent.

Exemption from tax for retrenchment compensation has been raised from Rs. 20,000 to Rs. 50,000, if paid under schemes approved by the Central government.

Basic rate of income tax applicable to companies is brought down by 5 per cent, to benefit employment-oriented companies involved in consultancy, advertising, tourism promotions etc.

The tax holiday concession in respect of industrial undertakings, hotels and ships which go into production/become operational before April, 1985 is extended for another five years.

Reactions

The press by and large hailed the Union budget as "bold", "imaginative", "growth oriented", "a fine economic enegineering in the circumstances", "courageous", "pragmatic" "intended to stimulate all round growth and productivity", "egalitarian", "the Centre has done its job and it was for the private sector to act now", etc. The other side of the reactions to the budget termed it "inflationary", in view of all round price increase of consumer items on account of hike in railway freight, petroleum products, petrol, diesel, kerosene, vegetable oil, cost of commercial vehicles, increased transportation cost, etc. Others called it "anti-people", "anti-common man", "a rich man's budget", "designed to benefit affluent sections of society", etc.

Over 18 per cent exports hike in April—December, 1984

THE EXPORT SCENARIO for the period April-December, 1984, presents exports at Rs. 8146.2 crores (provisional) as against a figure of Rs. 6858.3 crores (provisional) during the first nine months of 1983. This performance reflects an increase in exports by 18.8 per cent during this period.

Imports during the same period stand at Rs. 11,746.1 crores (provisional) as against Rs.10,416.5 crores (provisional) during the corresponding period in 1983, thereby showing a percentage increase of 12.8 per cent.

The balance of trade shows a deficit of Rs. 3599.9 crores (provisional) during the period Apil-December 1984, as against trade deficit of Rs. 3558.2 crores (provisional) during the corresponding period in the previous year.

Provisional export figures of Rs. 999.1 crores for December, 1984, indicate a percentage increase of 11.5 per cent over the export performance of Rs. 896.3 crores (provisional) durig the same month in the previous year. Imports, on the other hand, went up by a marginal 1.2 per cent during December 1984, at Rs. 1418.4 crores (provisional) as compared to a figure of Rs. 1401.8 crores (provisional) during December, 1983.

The balance of trade deficit during December, 1984, was Rs. 419.3 crores (provisiional) as compared to a trade deficit of Rs. 505.5 crores (provisional) during December, 1983. □

Nuclear energy : some issues and choices (Part 2)

Shibdas Burman

In this section the author briefly outlines the basic technical features of a Candu reactor. He touches on uranium conservation and some development goals of Candu, such as, the replacement of heavy water as coolant. Lastly, some views on the Fast Breeder Reactor are also added.

IN THE EARLIER part of this essay we traced first of all, the three stages for the development of nuclear power in India as planned by the Indian Atomic Energy Commission. The nuclear power programmes of various countries is briefly mentioned. After a brief discussion of the theory of nuclear power generation, the remarks of Hans Bethe on Candu system was quoted.

Uranium conservation in Candu

The basic technical features of the Candu reactor are : a pressure-tube design, with heavy water cooling and a separate heavy water moderator contained in a calandria, which uses natural uranium fuel. The choice of the pressure-tube design, instead of the pressure vessel concept, facilitates on-power fuelling, thereby contributing to neutron economy through the efficient removal of parasitic fission products. The adoption of heavy water, natural uranium and pressure tubes, rather than light water, enriched uranium, and pressure vessels has resulted in far-reaching technical and economic benefits for the Candu programme.

We continue to discuss the ways in which uranium may be conserved in Candu reactors.

Table 4* shows the potential for uranium conservation in Candu type reactors, according to A.J Mooradian and O.J.C. Runnales Case 1 is based on the present commercial CANDU-PHW design. Case 2 shows the possible benefit of using uranium silicide fuel, which has not yet been developed for commercial application but has advantages because of its higher density of uranium within the fuel. The benefit of U:SiAl fuel can be extracted either as improved fuel utilisation or conversely by a reduction in plant capital cost. Table 4* shows only its possible effect on reducing fuel use per unit of power output. Case 3 indicates a once-through, natural uranium fuelled reactor based on the Pickering design but optimized for uranium conservation, and using a boiling indirect cycle.

Case 4 introduces plutonium recycle on a self-sufficient basis, this is, only plutonium from a given reactor is cycled back to the same reactor. The fuel is then a mixture of natural uranium plus the recycled plutonium. Such a fuel cycle results in extending uranium utilisation by a factor of about two over the current practice of the once-through cycle. According to Mooradian and Runnalls, no radical innovation would be required in the design of the reactor. However, such a system would require the development of a fuel processing industry and a toxic fuel fabrication industry. Although simple plutonium recycle is a highly credible method by which to reduce uranium consumption, it can be used to much better effect when combined with the thorium cycle as in Case 5, writes Mooradian and Runnalls.

Case 5 again uses the basic Pickering type of reactor but introduces the thorium-plutonium fuel

*Given at the end of this article.

cycle. The primary fuel is natural uranium. Unlike Case 4 in which each reactor sustains its own fuel cycle, in this case a system of reactors is conceived. On the average, 4.5 reactors make up one self-suporting system. Of these, 3.5 reactors are fuelled with a mixture of ThO_2—$U(233)O_2$—PuO_2 while one is fuelled with natural uranium to produce the plutonium required by the other 3.5 reactors of the system. The technology of the reactor would be similar to those in commercial operation today. Following work by W.B. Lewis et. al. and T.W. Evens, thorium fuels already have an extensive experimental base THO_2 is difficult to dissolve and will require a more costly reprocessing scheme than that of UO_2 fuels. The plutonium processing would also pose a problem. The burnup figure quoted in the Table for Case 5 results from an optimisation based on a particular assumption for fuel cost. If uranium becomes extremly expensive, Case 6 would imply virtual independence from uranium; nuclear power would be produced with thorium fuel, given an initial inventory of plutonium enrichment.

It may be noted that Cases 4, 5 and 6 require fuel processing plants and radioactive fuel fabrication facilities, but they do not require enrichment facilities.

Of our interest is the scope for future use of thorium in Candu reactor. Table 5* gives the approximate equilibrium fuel consumption in Candu, LWR (Light Water Reactor) and LMFBR (Liquid Metal Fast Breeder Reactor) under different fuel cycles (S.R. Hatcher, AECL, No. 5217, 1975). In this table two figures are shown for thorium cycles in Candu reactors; these represent the extremes between the simplest plutonium|thorium cycle and what may be achieved at a higher fuelling cost if the system can be made self-sufficient. A self-sufficient cycle would require the plutonium from only 1.9 megagrams of uranium (2.5 tons of uranium oxide) for each MWe to start up the reactor; after that no further uranium would be required.

An independent calculation : uranium conservation

Independently, the U.K. scientist Lord Vivian Bowden of Chesterfield, a former colleague of Lord Ernest Rutherford made a calculation of fuel consumption in various reactor systems (report submitted to the Sizewell enquiry in UK, October 1983—May 1984). He simplifies the comparison between several possible fuel cycles by normalising them so that each system produces the same amount of power as 100 tons of uranium ore, processed and burned in a PWR. Current practice is to burn ordinary uranium in a Candu and uranium which has been enriched to 3.2 per cent U 235 in a PWR. The figures are intended to be illustrative. He has covered only a few of the many possible combinations of alternative fuels, and made no attempt to discuss the total amount of fuel that will be needed as the nuclear industry grows. According to Lord Vivian Bowden,

A PWR uses	100 tons uranium
A Candu uses	83 tons uranium
But if the PWR used more expensive, more highly enriched fuel (4.3% U 235) it would need	81 tons uranium
If the Candu fuel were enriched to 1.2% U 235, it would need	59 tons uranium
If Thorium were used as well as uranium in a Candu it would need only .	16 tons uranium

So that a Candu reactor which is burning a mixture of Uranium and Thorium will need only one sixth of the amount of uranium which is consumed by a PWR set. In other words, the length of the nuclear age can be extended sixfold. He makes the point that this can be done without any complicated chemical processing. But if and when chemical separation becomes possible on a large scale, then plutonium can be used as a supplementary source of neutrons in a Candu, and a reactor using a mixture of uranium and plutonium would use 30 tons uranium. And if the spent thorium fuel can be reprocessed and the uranium 233 which is recovered can be used to activate more thorium the amount of uranium required will drop to 0 tons uranium, and the thorium cycle will become self-sustaining. The reactor will need "topping up" with small quantities of uranium from time to time. Continues Bowden, the reaction has to be initiated by using uranium and thorium together, but the amount of uranium 233 from the thorium will progressively increase until no more uranium is needed. Such reactors will provide the world with power for many hundreds of years and we can stop worrying about the problem altogether (May 1984).

Regarding the use of PWR in future Lord Bowden thinks that they will probably be useless, and those which have not already worn out will have to be decommissioned, and probably buried under mountains of concrete for future generations to preserve, and ultimately to disinter.

Some development goals—Candu

A major concern of the Atomic Energy of Canada Limited is to establish the various alternative fuel cycles. A major area of possible development of the Candu design is the choice of heat-transfer fluid, or coolant, used to extract the heat energy from the reactor core. In CANDU-PHW design the coolant is Pressurized heavy water. Heavy water is an efficient but expensive heat-transfer fluid, and two other coolants have been examined by the AECL for possible saving in energy costs. The first alternative is to replace the heavy water coolant with light water, and a full-scale design study has been conducted for the CANDU-BLW concept, in which the coolant is Boiling Light Water. Another potential coolant is a

*Given at the end of the article

light heat-transfer oil, or "organic" fluid. This option has also been examined by them in a design study defining the CANDU-OCR, or Organic Cooled Reactor. The engineers have discover that heat could be transported by an organic chemical, a "terpene" which can be heated to a much higher temperature than heavy water before it boils. The high temperature would improve the quality of the steam and increase the thermodynamic efficiency of the turbines. Further, it does not carry radioactivity with it as it circulates, unlike the case with water.

Fast breeder reactor

An account of research and development of Fast Breeder Reactors in India has recently been given in Nuclear India, v. 22, nos. 5 & 6, (Jan.-Feb-1984). The words "liquid metal" in the LMFBR refer to the liquid sodium used to cool the reactor and to transfer heat to water which will produce steam to run the electric generators. The word "fast" means that neutrons in the reactor core move rapidly, and "breeder" represents the breeding capability of the reactor to produce more fissionable material (fuel) Plutonium 239, through the fast neutron bombardment of and absorption by Uranium 238. As operations continue, other isotopes of Plutonium (240-242) can be used in the breeder. The LMFBR power system consists of a nuclear steam supply system with three fluid circuits.

Comments

We shall not prolong the discussion by writing more on the breeder reactor, but shall confine ourselves in citing the views and facts on the performance and other aspects of Candu and FBRs.

The British prototype fast reactor at Dounreay, after some initial difficulties not associated with the nuclear components, is reliably generating close to its design figure of 230MWe (electrical) with surprisingly little fuss and bother. In terms of heat output it is ten times the size of the experimental Dounreay Fast Reactor that operated so successfully for 18 years. The key to safety lies in the design process itself, states Sir Brian Flowers, so that the design and construction of a commercial scale reactor at the appropriate time would itself be an important step in assessing whether the required level of safety can be achieved in practice. Continues Flowers, it is also clear that the present state of knowledge about the safety of fast breeder reactors does not allow one to rely upon a continuing FBR programme. For this reason alone it would be wise to provide for alternatives.

In an article in the Bulletin of Atomic Scientists, June 1970, Creutz describes the problems of safety of fast reactors "in some detail because it seems to me typical of what has occurred numerous times in the history of the development of atomic energy. Thus phenomena which required considerable unexpected effort to overcome were often not fully appreciated when the decisions to proceed with a major project were first made. Anticipating some such difficulties, the more scientifically inclined members of research and development groups like to carry out work to try to understand the nature of the phenomena. Experience shows that it is prudent to encourage a substantial amount of this kind of work to understand basic mechanisms before the engineering design has proceeded too far. A homely example of this is given by the plutonium-alpha story".

Although we do not describe here the plutonium-alpha story, we state the moral drawn by Edward Creutz : "I suppose there always will be differences of opinion among project planners on the balance of effort justified between the two different ways of working with Nature—on the one hand asking her leading questions to see what she had to say, and on the other hand trying to bend her to one's will without much discussion of alternatives".

Let us take a look at what happened to the American experiences of building a prototype Clinch River Fast Breeder Reactor. It was designed for 975 MW thermal and a net output of 350 MWe. Buffeted by a storm of technical papers, demand forecasts, and accounting reports, the reactor project in the USA went to its demise in October 1983. On the other hand in Europe, Britain decided to join an European Consortium with France and West Germany to build a fast reactor.

The FBR protoype Phenix, a 250 megawatt reactor in France, has been providing power since 1973. After 8 years of "working like clockwork", in the words of Georges Vendreyes, a French scientist, Phenix sprang a leak in April 1982 in its cooling system, leading to a fire when the sodium came in contact with the air. The accident put the reactor out of operation for several weeks and stimulated a debate about fast breeder safety.

The French now reckon that the next reactor Superphenix, jointly financed with German and Italian partners will be relatively trouble-free. Environmental groups and even some nuclear engineers are not so sure. They still worry about fast-breeder safety. The electricity that this 1,200 MW reactor will generate cost 2.2—2.3 times asmuch as that generated by a conventional nuclear-power station. Its operating cost will be about 1.5 times those of a conventional station and its capital costs—excluding interest and R&D expenditure—will be about F.Fr 11.5 billion ($ 1.4 billion), more than double the cost of a conventional reactor in France.

"For their next fast breeder, the French hope to produce a reactor 40 per cent cheaper than Superphenix. Although still more expensive than the conventional reactors, this would be a great improvement. The snag is that the French will cut back on

the safety margins built into the reactor in order to meet their goal". (The Economist, August 1983).

In the article "Long-term nuclear options" (Environmental Science and Technology, October 1981), Kerry O'Banion analysed the threats posed by various options to the environment. The FBR waste emerges from the reprocessing plant as an acidic liquid and must radioactively "cool" in tanks for several years before it can be vitrified and placed in long-term storage. Liquid wastes are more difficult to contain safely than solid wastes. Further, O'Banion says that a sodium coolant failure could lead to a breach in containment and to a mobilization of activation products through the oxidation of structural materials. Also, in the absence of cooling by sodium, in the event of a coolant loss and a failure of backup control systems, and given the increased reactivity and higher heat in a breeder, a serious mishap in the core itself could occur. In that event, the core could conceivably go on to explode with the force of upto a fraction of a ton of TNT (O'Banion). Commenting on the mechanism of policy on nuclear energy by different countries, O'Banion writes (ES&T, October 1981), "The fact that countries such as France and Britain, as well as the Soviet Union, have strong nuclear programs and are much further along the road to FBR utilisation is often taken to mean that they have in some way solved or escaped this (meaning the problem of risk inherent in FBR route) problem. In reality, the problem is not escapable or solvable; France and Britain-impelled in large part by an energy situation far more precarious than ours—have simply made the decision that nuclear energy is in the national interest and that the national interest is to prevail over individual or group concerns. As a result, the system of financing, licensing, and building new reactors is, compared to U.S. standards, a fast track indeed. The national government defines the nuclear program, the national government builds (and guards) the plants; and the lay citizenry is excluded from the regulatory process. The only recourse for one who objects either to a particular project or to nuclear energy in general is to vote the government out at the next election".

(To be continued)

Table 4*

Candu-PHW Potential for Uranium Conservation
LES Besoins Des Reacteurs Candu-PHW DE Luranium

Case	Technology	Fuel Burn-up (MWd/ te Heavy Metal)	Running Consumption of Natural Uranium g/ekWye
(1)	Current Pickering Fuel Natural UO_2		
	(a) Absorber rods	7,500	168
	(b) Booster rods	8,200	154
(2)	Pickering Fuel Natural U_3SiAl Absorber rods	9,000	140
(3)	Pickering design for U Conservation Fuel Natural U_3SiAl Booster rods Boiling Coolant	10,500	120
(4)	Fuel Natural UO_2 plus Pu-recycle Absorber rods	15,000	84
(5)	Fuel Th/U^{233} cycle with Pu from Natural Candu-PHW	30,000	35
(6)	Self-sefficient Th/U^{233} cycle	12,000	0

*Private communication from C.H. Millar and E. Critoph, Chalk River Nuclear Laboratories

Source: A. J. Mooradian and O. J. C. Runnalls, Candu-Economic Alternative to the Fast Breeder, AECL, No. 4916, Presented at the 9th World Energy Conference, Detroit, 23—27 September, 1974.

Table 5

Approximate equilibrium fuel consumption

Reactor	Fuel cycle	Fuel consumption(kg/MWy) Uranium	Thorium
CANDU	Natural U once-through	160	—
	Plutonium/uranium	80	—
	Plutonium/thorium	44	1
	Thorium self-sufficient	—	2
LWR*	Enriched U once-through	220	—
	Uranium recycle	190	—
	plutonium/uranium	155	—
LMFBR†	Plutonium/uranium	2	—

*Light water reactor fuelled with enriched uranium.
†Liquid metal fast breeder reactor fuelled with plutonium and U^{238}.

Source: S. R. Hatcher, Fuel for Nuclear Power in Canada: Options beyond the Year 2000 AECL, No. 5217. The Canadian Business Review, v.2, n. 4, Autumn 1975. □

Challenges of settling world homeless

BY IGNORING THE NEEDS of the 100 million people in developing countries who are either homeless or live in inadequate shelter, real estate professionals are inviting massive government intervention in the real estate market, John Cox, Director of International Year of Shelter for the Homeless (1987) said in an address to the Canadian Real Estate Association in Ottawa, Canada.

Mr. Cox, a former senior official in the Canadian federal government, is now with the United Nations Centre for Human Settlements, based in Nairobi, Kenya, the UN agency coordinating activities for the year.

In his address Mr. Cox told the Canadian realtors that it is now conservatively estimated that one quarter of the world's population do not have adequate housing, and of these, approximately 100 million have no shelter whatsoever. In developing countries, on average, 50 to 75 per cent of urban dwellers live in slum and squatter settlements. Further, within fifteen years, the urban population of cities in developing countries is expected to double to 2000 million.

"Can you visualize what these statistics imply in terms of land assembly, urban renewal and rehabilitation, not to mention new housing construction and new infrastructure needs ?" he asked: or on the other hand, "the enormous risk of social breakdown, political upheaval, economic instability and even civil violence if we fail to deal with these needs ? The fall-out will not be just a developing country issue".

Mr. Cox placed special emphasis on the land question. "The land tenure position of most of the people verges on the catastrophic, characterized by exploitation, illegality and insecurity", he said. "There is an overwhelming need for a solution to the land delivery problem in developing countries".

"Real estate professionals are in the business of identifying land resources, assembling holdings, preparing property for development, arranging financial support, marketing and transferring lost, and dealing with legal and financial questions", he said, "while it is unusual in government service to find professional staff members with adequate experience. In spite of this many governments are planning massive incursions into the real estate market -perhaps three or four times the scale of the present--with only the vaguest notion of what is involved".

There is a great opportunity for a public|private partnership in solving the land delivery problem, Mr Cox said. The real estate professional has the required operational knowledge for land marketing and land-financing activities. The government has legal, administrative and fiscal powers which can make such activities feasible. There are many examples of this public|private partnership for land assembly and development in Canada.

Mr. Cox suggested that real estate professionals should become more involved in assisting developing countries as technical experts in bilateral aid programmes.

As regards International Year of Shelter for the Homeless (1987) Mr. Cox said that 110 nations have identified a National Focal Point for their IYSH activities. In Canada it is the Canada Mortgage and Housing Corporation for domestic activities and the Canadian International Development Agency for international activities. ☐

(*continued from page* 19)

human personality—that alone can strengthen democratic institutions in our country. The real reform of education lies in linking it again with the current roots of India. India is heir to a distinguished and powerful intellectual tradition. But higher education in India suffers from a lack of direction and purpose. Some of our education is of a high standard as is clearly hold out by our medical and engineering graduates performing abroad and our best students are able to shine everywhere in the world.

We need better manpower plannnig and reform of higher education through diversification of courses to meet specific needs. Without attempting a one-to-one correspondence between education and jobs, the education system has no special competence to provide or to evaluate these skills. Job performance alone can give the needed credentials. ☐

More rural women to benefit in Seventh Plan

TWENTY PER CENT of the beneficiaries to be covered under the Integrated Rural Development Programme (IRDP) will be women in the first year of the Seventh Plan. This would be progressively increased and will include households headed by women to give new thrust to their uplift.

Where families are covered under the IRDP, the assets would be registered in the joint name of husband and wife. This would make women more creditworthy when dealing with banks and financial institutions. A sum of Rs. 214.50 crores is the allocation proposed for IRDP during 1985-86.

It is proposed that women should take a leading role in the wasteland development programme for which they would be given lease rights and financial inputs under the IRDP and NREP programmes. They should take up production of fuel and fodder which would directly benefit them. Economic schemes suitable for women should be identified which would include upgradation of traditional skills and production of marketable items such as agricultural and horticultural products and such other items of mass consumption for schools and government offices. Forty to 50 per cent of th beneficiaries under the National Rural Employment Programme (NREP) are women and as such supportive services should be provided to them. Similarly, women should benefit under the Rural Landless Employment Guarantee Programmes (RLEGP) One third of the beneficiaries under Training Youth for Self Employment (TRYSEM) programme would continue to be women.

In 1985-86, the proposed provision for NREP, RLEGP and TRYSEM is Rs. 632.50 crores.

The Ministry of Social and Women's Welfare and the Department of Rural Development are restructuring the administrative set up for taking up the IRDP programmes by women.

The Union Ministry of Labour has proposed to provide assistance to the extent of 50 per cent for setting up women's Industrial Training Institutes (ITI's) by the State Governments and also to establish six more Regional Vocational Training Institutes for women.

The Government is also considering to provide maternity cover for women workers so that employers are not prejudiced against taking them. □

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Focus on black money

Yojana, May 16-31, 1985, issue will carry symposium on Economy Sans Black Money. The participants in the symposium include Dr. Malcolm. S. Adiseshiah, Prof. K. N. Kabra and Dr. Raja J. Chelliah.

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Economy sans black money

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Labour situation in 1984

NEXT ISSUE

'Towards a poisonous future !

States allot more house sites targets exceeded !

MANY STATES have exceeded the target of providing house-sites to the rural landless workers during the Sixth Five Year Plan, according to a review made by the Government of India.

A total of about 53 lakh house-sites have been provided to rural families in 18 States during the Plan period upto February, 1985. The scheme is not in operation in Manipur, Meghalaya, Nagaland and Sikkim because the availability of house-sites is not a problem in these States.

Under item nine of the 20-Point Programme, house-sites [are provided to rural families who are without them, with expanded programmes for construction assistance.

The States which have exceeded the target of providing house-sites are Andhra Pradesh (14,93,170 house-sites), Uttar Pradesh (5,55,332), Gujarat (4,02,814), Karnataka (3,99,138), Rajasthan (3,38,042), Maharashtra (1,93,873) and Tripura (27,142), against their plan target of 11.10 lakh, 3.70 lakh, two lakh, 3.50 lakh, 1.90 lakh, 90,000 and 20,000 house-sites respectively.

In Tamil Nadu also, 13,10,724 house-sites have been provided to rural landless workers during the period, which is very near the target of 13.20 lakh house-sites. □

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You just can't do away with it ..!

Malcolm S. Adiseshiah

Choosing to call the black money phenomenon as the unaccounted sector, Adiseshiah points out that the dividing line between the unaccounted and the accounted sector is getting increasingly blurred, making identification of the former difficult. He says that the primary cause for the growth of this unaccounted sector is the state of our economy itself—its depressing features being stagnation, rising capita output ratio, increasing savings and growing capital intensity, continuing inflation, non-achievement of plan targets and growing mass poverty. The unaccounted income and wealth just can't be done away with without serious damage to the economy, he says and adds, what is feasible is to keep it within the limits. How !—he offers suggestions, both short and long term.

I MUST BEGIN this note with stating that I am against using the popularised terms like 'Black Money' or 'Black Incomes' or 'Black Wealth', because they have a racist overtone, making us accept the inexact and biased European and Indo-Aryan view that what is black is bad and evil, in contrast to what is white, which is always good and correct. What is of concern in this note is the fact that there is a large amount of money, income and wealth which has been and is being made and/or owned which is unaccounted in our Tax system, as against those items which are accounted and on which taxes are paid Hence, in this note, I will refer to the unaccounted economic sector which gives rise to unaccounted money, incomes and/or wealth. A second terminological clarification arises from the distinction between tax evasion which is what is referred to earlier and tax avoidance. Tax evasion is the result of under or non-reporting of a part of one's income or wealth. Tax avoidance is arranging one's income and assets in such a way (which is what everyone, even the most honest tax payer, does) so that the tax paid is minimal. A theoretical case can be made for bringing both tax evasion and avoidance under this note on the unaccounted economy. I am here concerned with evasion of taxes only and the unaccounted economy to which it gives rise

The unaccounted sector

The estimate of the size of the unaccounted sector of the economy is an extremely difficult enterprise in any country, and more particularly in India, because of the nature of the operation involved

First, the unaccounted sector is shrouded in secrecy, works underground and operates in the dark. No one ever admits that he or she is operating underground and making unaccounted money. This means that there can be no precise estimate of unaccounted money or wealth in any country. The guestimates on it are based on a series of indirect indicators, such as where money is moving very fast in what is called a high rate of the velocity circulation of money, and|or where there are large cash balances stacked away at home or with a friend, and|or where there are large real estates owned or brought and sold and|or where there are massive amounts or gold and jewellery, and|or where there are large stocks in trade financial claims and production and productive capacity above the licensed ones.

"Tax evasion is the result of under or non-reporting of a part of one's income or wealth. Tax avoidance is arranging one's income and assets in such a way (which is what everyone, even the most honest tax payer, does) so that the tax paid is minimal"

Second the unaccounted sector is not a separate indentifiable area but is interlinked and mixed in with the legal and regular sector of the economy. This linkage with the tax-paying sector of incomes and wealth is through the tax exempt agricultural sub-sector, or unregistered firms, trusts and unrecorded agreements. The most familiar example of the interlinkage between the legal, accounted tax-paying sector and illegal, unaccounted tax-evading sector is in purchase and sale of houses in every urban centre today, where a part is paid in accounted funds and a part (usually a major part) in unaccounted funds This movement of a part of the unaccounted sector into the accounted sector and vice versa means that the dividing line between the accounted and unaccounted sectors of the economy is becoming increasingly blurred, making identification of the latter difficult.

Concealment galore !

Third, there is a factor peculiar to the Indian economy which makes its unaccounted sector larger than that of other countries, both the industrialised and the developing ones. In industrialised countries, nine out of ten income earners are salaried persons who cannot evade taxes by hiding or understating their incomes. In India, on the other hand, most income earners are not salaried workers but self-employed professionals, traders and owners|managers of manufactures, small, medium and large. This means that the income of the majority of income earning workers cannot be determined; the persons concerned evade taxes and operate in the unaccounted sector to finance their underground unauthorised expansion of business, to build reserves against future contingencies and, of course, to finance their five-star culture and consumption. The special conditions operating in India include the high rates of return in trade and money-lending which can be and are concealed, the very large unorganised and informal sector which makes such concealment possible, and the existence of an important and widespread tax exempt sector referred to earlier, agriculture, which is a standing invitation to the proliferation of unaccounted incomes. Further, it is significant that the tertiary (service) sector in India has expanded to a level equivalent to that of the post-industrial societies of US and Japan because in the service sector consumption takes place simultaneously with production, on which there is absolutely no accounting.

A parallel economy !

It is therefore not surprising that the IMF staff survey on the unaccounted sector of the economy in various countries places it at 20 per cent of the GNP each in the US and Canada, 15 per cent each in Italy and Sweden, 10 per cent each in UK and USSR and 5 per cent in Japan, while endorsing the estimate for India of 50 per cent of its GNP which in 1982-83 at current prices was Rs. 145,141 crore, which means that India's unaccounted sector on this computation is of the order of Rs. 72,000 crore. My own studies point to a rather lower guestimate of about 40 per cent of the GNP at around Rs. 59,000 crores The report of the official study by the National Institute of Public Finance and Policy on the unaccounted sector commanded by the Ministry of Finance in 1983 is now completed and with the government, on the basis of which a more reliable idea of the extent of unaccounted income and wealth in India should soon be available.

More important, in a sense to plan for an 'Economy sans black money' is the need to identify the causes and consequences of the underground unaccounted incomes and wealth than to estimate its precise magnitude, because the former may point the way to the attainment of the objective of an economy without an unaccounted sector.

"The most familiar example of the interlinkage between the legal, accounted tax sector and the illegal, unaccounted tax evading sector is in purchase and sale of houses in every urban centre today, where a part is paid in accounted funds and a part usually a major part) in unaccounted funds."

As it develops !

The generally stated cause, both in economic studies and popular belief and writings, is that high rates of taxation lead income earners to evade taxes, resulting in unaccounted incomes and wealth The

government seems to subscribe to this view, as the Finance Minister in his budget speech in February 1984 stated . "the present tax structure has also been brought down to a level which I regard as realistic and entirely appropriate. I hope this measure will have a salutary effect on our tax payers to come forward and voluntarily declare their true incomes. The basic truth behind this alleged causal factor, that the tax system is related to the unaccounted economy, can be conceded straightaway, though that does not really explain the phenomenon. I started at the outset with defining the unaccounted incomes and wealth as those hidden from the prying eyes of the tax collector, so that to say that the unaccounted sector arises because of taxation is a bit of tautology, which amounts to saying that unaccounted incomes and wealth can be abolished if taxation is abolished. More seriously there is no empirical evidence of a direct link between lower tax rates, lower rates of evasion and higher rates of tax compliance, as the Finance Minister so fondly hoped for in the statement quoted above. Studies on our tax rates which began to be reduced in 1975-76 from a 97.5 per cent marginal rate to 60 per cent in 1978-79 show that while in 1975-76 tax receipts shot up to Rs 1214 crores (due to the discipline and the terror caused by the internal emergency declared that year), tax receipts declined in the following year and recorded a negative growth rate in that year and the two subsequent years, while the rates and absolute amount of evasions increased in those 3 years.

The congenial environs !

A similar analysis applies to attempts aimed at tracing the cause of unaccounted economy to the system of licences and control. Without the latter, the small producer will have been pushed out large and medium scale producers, operating on market forces, as they are trying even now to do under banami terms.

"In industrialised countries nine out of ten income earners are salaried persons who cannot evade taxes by hiding or understanding their incomes. In India on the other hand, most income earners are not salarised workers but self-employed professionals. This means that the income of the majority of income earning workers cannot be determined."

The case for doing away with the system of controls embodies in chapter III of the Industries (Regulations and Development) Act rests on quite other sound ground—of its policy irrelevance, its effect in the strangulation of industrial growth, and its being the fountain head of bureaucratic and political corruption, in a situation where through the public sector the state controls the commanding heights of the economy as well as owns and regulates all banking, credit, and money supply, along with the major share of the equity of all important private sector undertakings. It is this which has given rise to the correct and overdue government decision to seek to replace most of the physical controls by financial controls.

The root cause for the unaccounted sector is the economy itself and the manner of its functioning whose main features are stagnation, rising capital output ratio, increasing savings and growing capital intensity, low capacity use in areas where capital investment is high, continuing inflation, non-achievement of the major goals or the physical targets of the Plan, political and social restlessness and growing pauperisation of the mass of the people. In this kind of economy, there is an increasing gap between the return one is able to earn in trade and production without regard to laws, tax system and controls, and the returns that is legally permitted under the system. As the gulf between legally permitted and illegal return widens, the unaccounted sector takes on a life of its own, grows rapidly at an accelerate pace and becomes an autonomous force, with close links to the political forces and processes of the country, which begin to depend increasingly on the unaccounted sector.

"More important is the need to identify the causes and consequences of the underground unaccounted incomes and wealth than to estimate its precise magnitude, because the former may point the way to the attainment of the objective of an economy without an unaccounted sector.".

And its aftermath !

The consequences of the unaccounted economy are multiple, including . lower realisation of tax revenues . regeressive concentrations of wealth and property which evade taxes, the spread of five-star culture; serious leakages of country's foreign exchange earnings and the launderings of unaccounted money which comes back as a part of NRI investments; the frustration of the policies and priorities of the Five Year Plans, as 40 per cent of the economy operates outside its penumbra for the same reason, the ineffectiveness of the anti-inflationary policies of RBI and the government; the dwarfing of the declared social priorities and the credit flows into the priority sector by the unaccounted resources flowing into the non-priority sector, just as the industrial licensing to protect small industries or develop backward areas is countered by the underground economy's ghost factories, undeclared capacities, and the nullification of foreign exchange and import controls by the various smuggling and unaccounted devices the unusual increase in household sector savings, particularly the doubling of its financial aspects in the seventies, which move fast and escape detection : the flow into the control of the political system and the bureaucracy of unaccounted money, and the almost complete dependence of the entire economy on unaccounted incomes and wealth.

Here is the way out !

On the basis of the above analysis I do not believe that we can eradicate completely unaccounted incomes and wealth without damage to the economy, within the framework of the present political economy. In other words, we do not have the option of an 'Economy *sans* black money'. The only option open to us is to keep the functioning of the unaccounted sector within the limit of tolerance To be brief, about the total dependence of the Indian Economy as its functions today on the underground sector, I quote from a study, with which I completely agree · 'In sum, since curtailing the black economy slows down growth, weakens incentives or expansion of private investment on account of lower rates of permissible post-tax returns, closes some sources of fund and inputs needed for expansion, reduces the consumption of many luxuries which provide a spur to private efforts and initiative and builds up pressures to look for non-private sector agencies for growth and thus conflicts with preferred choice parametres, the device for eradicating the black economy cannot be taken up very effectedly Only a limited effort to keep it within manageable dimensions is likely to be made during periods when its size distribution and mischief tends to threaten the balance of forces in a destablising manner, excesively compromising the relative autonomy of the state.'

"More seriously there is no empirical evidence of a direct link bewteen lower tax rates, lower rates of evasion and higher rates of tax compliance."

The short-term ones !

The immediate corrective action that can be taken to control the unaccounted sector and keep it within the limits of tolerance are; (a) strengthen the collection and administration of the tax system and punish evaders by changing the legislation to prevent escape after raids and detection of unaccounted money and assets; (b) the detection of unaccounted savings in banks should go along with development of an information system on bank accounts, bank drafts, and cash deposits; (c) compulsory acquisition of real estate where their sale deeds show a low price bringing such legislation under the Seventh Schedule; (d) further extending the 8 measures in the 1984 Finance Act to stop tax evasion, (e) like a periodic purgative to purge the body of poisons, demonetization which will destroy the 15 to 20 per cent of unaccounted incomes and wealth held in unaccounted currency holdings; and (f) the financing of all elections—national, state and local—by the state, on the basis of agreed norms, maintenance of accounts, and statutory audit as part of overall electoral reforms.

And the long-term ones !

The long term measures which will really slow down, if not halt, the proliferating unaccounted economy is to restructure the economy to bring about a less unjust economic order through chosing gap between the asset holding well-to-do minority and the assetless poor majority, through effective land ceiling and land distribution and other measures oo ensure that every rural family has some asset; on the manufacturing side, the public sector will have to be reconstructed to become commercially viable, which will also bring the private sector under its umbrella like control, so that the agreed socio-economic policies and priorities are effectively followed. This would create a climate which will bring the unaccounted sector to a tolerable and to learnt size.

"As the gulf between legally permitted and illegal return widens, the unaccounted sector takes on a life of its own, grows rapidly at an accelerated pace and become an autonomous force, with close links to the political forces and processes of the country, which begin to depend increasingly on the unaccounted sector."

"I do not believe that we can eradicate completely unaccounted incomes and wealth without damage to the economy, within the framework of the present political economy. In other words, we do not have the option of an 'Economy sans Black Money'. The only option open to us is to keep the functioning of the unaccunted sector within the limits of tolerance.'

Let's attempt marginalising it !

Kamal Nayan Kabra

In this article, Kabra is of the view that black money cannot be wiped out; it can only be marginalised He feels that the main cause for generation of black money in the country is the State's intervention to make the economy move in a different direction from its inherent course. He cautions that if strong moves are made against the vast and fast growing black money, it may hamper incentives and investment climate. This malaise cannot also be tackled by succumbing to the pressures of those who are its main operators and beneficiaries or by showering concessions on them. Kabra feels, if the goal structure is to remain unchanged and the black economy is to be curbed, then, a different line of policy readjustments and innovations is needed and he suggests the line of action.

NOTHING SPECIFIC WAS DONE in order to create the black economy in India it is an unwanted, one may even say, illegitimate growth resulting from the interaction of many economic, political and social factors, which has spread itself almost everywhere, assuming a near commanding role. If there were no State interventions to make the economy function in a different manner than its elemental manner and move in a somewhat different direction from its inherent course, we would not have seen the emergence of any black economy in India But, then, would everyone have lived happily as no black economy would have plagued the functioning of the system? Apparently, little of what we see by way of 'growth' of the economy, its structural change and diversity, would have resulted simply by the departure of the British from India but without massive direct and indirect State intervention in the economic sphere

Why should State intervene !

From this can possibly follow a line of argument that it is not simply State intervention as such, but its extent, nature and form which gave birth to the black economy and its present magnitude What would almost always happen as deviant behaviour on the sidelines would not have usurped centre of the stage Then the black economy would probably have remained a marginal, manageable affair

This is no easy proposition to examine What is probably implied is that if we had gone in for a pattern of growth in which private enterprise had a freer rein, the state would have just created the conditions in which private enterprise can prosper and expand and then the State would have withdrawn, we would not only have avoided the painful growth of the 'parallel' economy but probably would have moved faster. The alternative scenario would have contained

little detailed national planning with a large and growing public sector; nor would there have been a detailed regulatory apparatus to influence the pattern of growth, distribution of income and wealth, channelisation of investment, attempts to curtail or restrict imports of goods, services, technology and capital or to promote exports Accelerated growth and its spread effects in employment would have trickled the growth to the grassroots

State support, a must

Not that any growth is possible without State support, but the state support would have been there to the agents of growth who save, invest, and supply efforts and managerial-entrepreneurial services If any public sector was to become inevitable, it would have been handed over to the private sector at a low price once it overcame teething troubles, like in Japan or Pakistan.

Corporate sector would have been permitted to enter into agriculture, particularly for producing for exports, essential for paying for the import of latest technology. Like Japan or South Korea, land reforms would have been swiftly accomplished so that an efficient small farm economy capable of giving a growing market to the industrialists can emerge. If it was not politically possible and since the British (unlike the Americans in case of Japan) did not complete land redistribution before their departure, may be we would have introduced large, mechanised farms by permitting free entry of capital into agriculture and, like in industries, giving public support to those who 'industrialised' agriculture

Just mild dose of taxation !

It is not essential to detail the model in all its ramifications However, it is clear that it would not have been a 'no tax' haven All that could have been expected was a mild dose of taxation, shunning the pretence of equity or progression, but concentrating

"If there were no State interventions to make the economy function in a different manner than its elemental manner and move in a somewhat different direction from its inherent course, we would not have seen the emergence of any black economy in India".

on financing public spending Nor would price controls and administered prices have become essential in the non-statist growth model Both personal and corporate taxes under "free" pricing would have provided adequate incentive rates of return, yielding sufficient reinvestible resources to the investors Our industrial companies and giants, taking advantage of our 'cheap' labour, would have expanded to find mention among the world giants. Cheap and competitive products would have benefited the consumers.

It cannot be expected that there would have been such a powerful environment of tax compliance that black incomes would not have emerged at all. But it would have been a marginal affair. Present estimates put the size of the black economy in the range of 15 to 50 per cent of the total gauged size of the economy. If the experience of the countries which have adopted the alternative path similar to the one outlined above (fast growing market economies of East Asia and Latin American countries like Brazil) is any guide, we

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would have a much smaller black economy than we have presently. If the above line of reasoning is valid, it would tend to follow that the malaise of black economy in its present proportions is an outcome of what appears, at least in retrospect, a mindless flirtation with a 'socialistic pattern of society', which was intended to give us growth with social justice in a democratic polity. What has happened to the dream of 'growth with social justice' at the hands of, among other things, a blooming black economy is common knowledge

What helps black-money grow !

Thus, the relationship that seems to emerge, at least to some, that excessive state interference, against the gain of a market, private enterprise economy and attempt to forcibly marry growth with justice under the umbrella of democracy have bred a large black economy If emphasis has been on 'growth' will positive state support to it, it is contended by the votaries of the markets, competition and growth (supply-side economists or tax-cutters, as known in newfangled parlance), we could have grown into an industrial power and with much higher tax revenue at lower rates of taxes, from a much bigger cake, the poor would have been better taken care of, of course, some deviants would still dodge taxes and conceal incomes and wealth, but the black economy of the kind and on the scale we see today would not have emerged.

History does not offer retrospective choices. Nor can in real life economic, political and social forces be separated. The nature of democracy and freedoms for the citizens would certainly have been far too limited and social regimentation far too stronger and extreme in the non-statist market model. Political pluralism and universal adult franchise are hardly likely to lead to choices different from the ones India made in the fifties and sixties In sum, the non-statist,

growth alone model was just not available to post-colonial India.

More growth—less employment!

However, for the sake of clarifying policy choices, let us try to see how a market-centred pursuit of growth under non-statist private enterprise would have operated in the India of fifties and sixties. It can be said on the basis of backward extrapolation that even if higher growth rate of output, particularly industrial output, became possible, the employment situation would not have improved over the present one. In fact, public enterprises are, after all, accused of over-staffing and organised private sector hardly adds to employment. Thus the alternative growth profile would have had lower labour-intensity and would not have prevented growth of unemployment. The demand pattern regulating from greater concentration of income and wealth too would have been inimical to employment. Employment, which may have been lost on account of the choices of products and technologies for growth, could hardly have been made good on account of higher growth rate.

"It cannot be expected that there would have been such a powerful environment of tax compliance that black incomes would not have emerged at all. But it would have been a marginal affair."

The possibility of such a development is strengthened if one brings into the picture the impact of international linkages and developments in agriculture and small industries The pattern of demand arising from non-statist private enterprise as engine of growth would have led to a spurt in demand for foreign technologies and capital durable consumers' and intermediate goods. Constant need for such imports would have led ultimately to foreign debt and inflationary crises of Latin American proportions. Greater integration of ex-colonial economies with erstwhile masters have nowhere led to independent development with a balance of advantage in favour of the former.

Agriculture under a private enterprise market dispensation would have displaced a large number of small farmers without absorbing them in industry or other sectors. The cost structure with hired labour, mechanisation, institutional finance and absentee supervision would also have gone up. Small enterprises too would have suffered in the face of the forces of concentration and centralisation without countervailing steps by the State.

Black money corrupts politics!

It would be unimportant if a black economy of the seriousness of what we see presently would or would not have emerged. Today, our disapproval of the black economy is not simply legalistic or abstractly moralist. We denounce the black economy because of our intense anxiety and disapproval of the kind of consequences it produces and the perversion of politics and social development it brings about. Under the non-static market dispensation, the same undesirable consequences would have emerged legally. Instead of the presently obtaining symbiotic relationship between the state and black economy, under the alternative model, the state would have become "India Ltd", i.e., a corporate State with second rate citizenship for those outside the corporate sector. Self-reliance would have disappeared in thin air. A full-scale Brazilisation would have become our fate!

As we said, fortunately for us, owing to the balance of social-political and economic forces, we escaped the horrors of an undemocratic, full-bloom private enterprise-dominated state and economy in which all that we decry and associate with black money would have become 'legitimate' outcomes. But after all, it cannot be denied that our statist, public-sector planning, and controls-based mixed economy and democratic model reached the nadir of its performance with inflation, unemployment, deteriorating external environment and explosion of the black economy. Can we now turn to the model which we discarded in the fifties as our new saviour?

For one thing, politically it would mean changing the constituencies for the political powers from broad mass of people to some specific groups and classes. Its implications for democracy could be negative because a number of privileges, facilities, subsidies and place of importance in plan priorities would have to be denied to those who have become used to them It is possible to switch the "constituency" if other methods of winning elections like force, falsehood, emotional appeal, mass media based marketing of leaders, etc., are perfected and they can succeed time and again. Otherwise, more authoritarian, more 'disciplined' methods may have to be evolved.

At an economic plane, the 'technological gap' has widened. Opening up may come up against foreign exchange constraints, particularly in view of our declining share in exports, worsening terms-of-trade and generally receding third world export prospects The cliamate for external borowing is far worse Safe debt-servicing ratios do not produce capacity to repay. Not only the debt-trap for India but the lenders' trap is also a serious challenge because the lenders cannot cope with many Mexicos, Brazils, Polands and Indias, at the same time.

"... ...The malaise of black economy in its present proportions is an outcome of what appears, at least in retrospect, a mindless flirtation with a 'socialistic pattern of society', which was intended to give us growth with social justice in a democratic polity."

Constraints over curbs!

A still more serious constraint on the switchover to non-statist, "liberalised" and privatised model is

the fact that there already exists a vast and fast growing black economy. If strong moves are made against it, not only the model does not remain a non-statist, privatised one, but it hampers incentives and investment climate- -the very bases of the switchover It it is left largely untouched, it does not voluntarily walk back into the fold of legality and start paying a much reduced (50 per cent, as the rates stand now) but still a substantial tax bill where it paid none so far.

With black economy getting at best slowed down, the pattern of demand, investment and growth would become increasingly elitist (entertainment electronics, personal automobiles, luxury appartments, frivolities, etc.) with worsening unemployment, shortages of wage-goods and inflation Inflation and unemployment are not only a highly combustible combination socially but put brakes on private investment as well

The state too cannot reduce its range of activities overnight In order to increase resources and opportunities for private sector, it may slow down the growth of public investment for setting up of public enterprises and even the level of various public sector programmes like those relating to poverty alleviation. But public investment and external borrowing are great propellers of private investment. Their slow down could thus cause a chain reaction of adverse socio-economic consequences.

Mixed economy to stay !

Then, the large and better-off agriculturists, even when not touched for resource mobilisation and forcing greater recourse to external finance, would be restive as their position vis-a-vis captains of industry would worsen. In an inflationary situation, their terms-of-trade would worsen, while the need for larger procurement for subsidised distribution among the poor and the inflation-hit would increase In one word, it is no easy task to disembark from the statist, mixed economy path, either to rid it of the black economy (by bringing it to marginal proportions) or make it solve our problems of low productivity, high capital output ratio, technological backwardness (though such a view of technology makes a fetish of *latest* technology and ignore the more important question of its *relevance*), etc. It goes without saying that the switchover cannot hope to solve the problems of unemployment, poverty, shortage of goods of mass consumption, etc because it is not even meant to attack these issues directly.

"We denounce the black economy because of our intense anxiety and disapproval of the kind of consequences it produces and the perversion of politics and social development it brings about."

No bowing to pressure !

The upshot of the above analysis is that the malaise of the black economy cannot be tackled by succumbing to the pressure of those who are its main operators and beneficiaries or by showering concessions on them. If the goal structure of public policy and planning is to change in order to make the interest of the masses occupy a secondary place while according primacy to those who can participate directly and powerfully in the game of growth, it ought to be done expressly, and not in the name of curbing black money. Such a switchover only discredits the goals set so far and legitimates the outcomes and consequences produced by the black economy. As a scribe unashamedly argued the other day that curbing black money would curb growth It is clear that to such people, growth is an end in itself. It amounts to fighting the form of black economy, while embracing its substance.

"It cannot be denied that our statist, public-sector planning and controls-based mixed economy and democratic model reached the nadir of its performance with inflation, the unemployment, deteriorating external environment and explosion of the black money."

Seven ways to tackle it !

If the goal structure remains unchanged and black economy is to be curbed for more substantial reasons than for its cardinal sin of disturbing the distribution of the gains of growth among the private savers and investors, a different line of policy readjustments and innovations is required. The main elements of it could be as follows ·

One

For unearthing black incomes and assets, scope for *benami* transactions has to be eliminated or limited by systematic handling of all economic information and their *collation*. A system of giving Citizen Identification Number (CIN) to all the adults and organisations, preparation of a National Register of Citizens, making CIN the basis for all economic transactions and computerised central collation of all this information can go a long distance in unearthing black incomes and assets and checking their further circulation.

Two

Demonetisation of high denomination currency notes.

Three

A vigorous expansion of the production of mass consumption goods if need be under the auspices of the state, to overcome shortages causing black-marketing

Four

A massive housing programme and making all land and real estate deals move through a network of public sector real estate corporations.

Five

Strict control on the consumption and acquisition of frivolities, luxuries and items of conspicuous con-

(*continued on page* 29)

The Govt. is on the job, says Dr. Raja J. Chelliah

IT IS WELL-KNOWN that the generation of black income and its use for both legitimate and illegitimate purposes have assumed large proportions in the Indian economy. This phenomenon not only results in a huge loss of revenue to the Government but also distorts resource allocation in the economy and often leads to wasteful use of money. Besides, tax evasion, which is one of the routes through which black money is generated, creates great inequities among taxpayers who are honest or who cannot evade taxes on the one hand and those who are dishonest and are in the position to evade them.

It seems that the Government is now seized of the problem In order to tackle the menace of black income, a two-pronged approach has to be adopted. First of all, the major causes leading to the generation of black income must be dealt with insofar as it lies within the powers of the Government This would involve the removal of some physical controls which are specially associated with the generation of black income, the fixing of reasonable tax rates, etc. The second line of action would be to improve administration and the standards of morality among the officers as well as to take steps to enforce economic laws, including tax laws, far more stringently. Obviously, such actions by the Government would take some years to yield benefits Thus, we can only hope to bring down the black economy to manageable proportions over a period of years. □

The menace of black money!

Raghunath Raina

Black money has grown to enormous dimensions, permeated every section of society and every sector of economy and has been accepted and also achieved respectability, says the author. He laments that several measures taken so far to contain it have failed. He is of the view that black economy has to be attacked on a broad front and lists some of the measures to tackle it. Quoting the Prime Minister's recent statement, he says the government appears to be determined to put an end to the menace of black money and has the political will to do so.

NEWS ITEMS APPEARED recently about the Income Tax authorities' sweep on builders and their associates in Bombay. Among those being investigated were some known smugglers who had taken to building trade which had become as lucrative as their earlier activtties.

Within a few days of this news, there was a report saying that following the action taken by the authorities to unearth black money there had been a scramble to invest unaccounted money. This had pushed up prices of gold and bearer bonds to new heights. The same day, another paper reported, what it called the decade's richest gold haul from the sea near Bombay. The customs officials were said to have recovered 171 kilograms of Swiss marked gold bars worth over four crore rupees.

Fantastic dimensions!

These news items are indicative of the dimensions of black money operations. Yet these only constitute the tip of the proverbial ice-berg. The fact is that black money has permeated every section of society and every sector of economy. What is worse, it has been accepted and has achieved respectability!

Sources—known and unknown!

The sources of black economy are too many to be recounted here. They however fall into two categories. The first is outright illegal practices. Evasion of income-tax is the obvious one. What is not so obvious is the evasion of excise duties. Once a consignment of goods leaves the factory without paying excise or paying less excise by juggling with the categories of goods, the entire process, till these are sold as finished articles, becomes a part of black economy. Then there is outright black marketing and smuggling. Some estimates say that smuggling is as large as the nation's official trade.

There are illegally installed capacities, underground factories, sale of "ghost" factories and disposing of scarce high premium inputs, taking fake registrations under sales tax and innumerable other devices.

Apart from these illegal operations, there are activities carried out by companies, registered firms, or partnership firms for which the values of transactions are either partially recorded or over-recorded depending on whichever way the net financial advantage lies and the tax liability is lower.

The grey sector too!

Apart from white and black, there is also a grey sector. In this category, an unaccounted part is added to an accounted transaction, to reduce the tax liability of the companies and firms. This is a most common practice.

Why it generates !

A number of reasons, economic and political, have been offered to explain this phenomenon. One view is that black economy is an evidence of lumpenisation of capitalism in our country, from monopoly caiptalism to state capitalism. This process, it is believed, is inherent in the system, particularly in post-colonial "enclave" growth societies in which weak capitalism is sought to be developed through state-sponsored planning and public investment.

In this process, it is argued, the black sector does not only work against fuller employment and self-reliance, it also enables the dominant economic interests to increasingly intervene in the political sphere. It is widely believed that black economy has become an important operational component of the Indian economy with many diverse links with the political system.

All Measures ineffective so far !

What is evident is that black economy has expanded to an extent that the difference between the legal and illegal operations has become almost invisible and all measures taken so far to contain it have failed. For example, demonetisation was effected twice but hardly yielded any results. Subsequently, two voluntary disclosure schemes were introduced in 1951 and 1965.

The Direct Taxes Enquiry Committee of 1971, known as the Wanchoo Committee, referring to these schemes noted that "they were more or less schemes for converting black money into white on payment of what turned out to be in most cases, a small amount of conscience money"

Contrary to the recommendations of this committee, another voluntary disclosure scheme was introduced in 1975. Its results too were similar to earlier schemes. Another measure, the Special Bearer Bonds, was introduced in 1981. The provisions of the scheme amounted to public borrowing out of black monetary resources, at a relatively low rates of interest, which were more than compensated by waiving of tax liability and penalties.

Then what should be done !

What is evident from all this is that black economy has to be attacked on a broad front. The specific measures which have been suggested include demonetisation of high demonination currency notes. Another suggestion is to set up a Real Estate Corporation to take over under-valued properties all over the country.

The third is, to have Central Taxes Pass Books These should carry every detail about one's assessed income, source of income, major items of wealth, entries about gifts made or received and so on

Apart from these, it is believed that rationalisation and simplification of tax structure is necessary. Not only that, there is an urgent need to create an economic environment in which concealment of income and wealth becomes unnecessary.

All this is a stupendous task. It does not only call for conomic masures but also political action. It needs mobilising different sections of people in every sphere to fight the menace—a sort of nationwide cultural revolution And the beginning has to be made by considering the Election Commission's recommendation that the State should finance electioneering.

Government is determined !

What is heartening in this black scenario is the evidence that this time Government means business In his recent statements, the Prime Minister has expressed his Government's determination to put an end to black money. This is the first time that such forthright and unequivocal pronouncements have been made at the highest level.

In an interview to a Bombay Weekly, Mr. Rajiv Gandhi said, "we have got an enormous black economy which is pulling us down. Now we have to find ways of drawing this unaccounted money into the mainstream of our economy."

Asked how he proposed to mop up these thousands of crores, the Prime Minister said, "we have to find ways". He made it clear that he did not subscribe to the methods used in the past. New methods had to be adopted.

And of course with political will !

It is generally believed that a lack of political will has come in the way of effective and drastic action against black money. But what the Prime Minister has said shows that this is no longer going to be a problem. He told the Bombay Weekly, "We propose to take strong measures to remove the sources of black money and convert the existing amount to white and introduce deterrent punishment against those indulging in the generation and circulation of black money." Mr. Rajiv Gandhi added : "With will and determination this can be done. We did so with the Anti-Defection Bill which had defied past attempts to push it through and I don't see any reason why we should't succeed with a similar law against black money and the black market."

Yojana, June 1—15, 1985 issue will focus on cleansing the Ganga and pollution control to mark the World Environment Day on June 5, 1985

Labour situation in 1984

H. Pais

Reviewing the industrial situation in the country during 1984, *the author points out that loss of mandays due to strikes was more than due to lockouts during the year. But even then there was no work stoppage of the magnitude of Bombay textile strike of the previous year. From this point of view, he observes,* 1984 *was not a bad year. About the right to strike in public utilities and frequent resort to strikes in some of them, the author observes that there is unwillingness to enforce the relevant laws thus resulting in indiscipline in industry. He feels that before embarking on a legislation to deal with the situation, it would be advisable to have a national debate.*

IT IS CUSTOMARY to judge the state of industrial relations by looking at mandays lost through strikes and lockouts. From this limited point of view, 1984 does not seem to have been a bad year As the table shows, the total loss was 30.82 million days in 1984. Final figures from some states are still due. When these arrive, the number should be around the 1983 level. Government statistics for 1982 and 1983 do not include the loss due to the Bombay textiles strike. Loss on this account was 41.40 and 13 38 million days during these years

Year	No of mandays lost '000 due to		
	Strikes	Lockouts	Total
1980	12,018	9,907	21,926
1981	21,208	15,375	36,584
1982	10,712	22,502	33,214
1983	11,543	21,937	33,480
1984	15,946	14,876	30,822

Strikes cause more loss

A more effective way of gauging the impact of strikes on industry would be to compare mandays lost with total mandays worked. Unfortunately statistics for industry as a whole are not maintained. The annual survey of industries compiles figures only for the manufacturing sector. Even here, the latest statistics relate to 1980 when the loss was 1.18 per cent of the total mandyas worked. For the first time in three years, the loss due to strikes was more than due to lockouts. Three years is too short a period to indicate any trend but the change from the two previous years when lockouts accounted for about twice the number of days as strikes, is significant. During the year 1984, there was no work stoppage of the magnitude of the public sector strike in Bangalore in 1982 and the Bombay textile strike in 1982 and 1983. Major ports however were a problem with a month-long strike seeking higher wages and house rent allowance. Loss of wages and port traffic alone do not indicate the magnitude of total loss due to a strike of this kind. The effect of delays and disruptions in the economy as a whole would be enormous.

To verify union's membership

The moderate loss of mandays due to strikes and lockouts should not induce a false sense of euphoria. Issues which are fundamental to good industrial relations continue to remain unattended. A number of meetings have been held by the Chief Labour Commissioner with central organisations of trade unions on the method of verification of membership of their affiliates. The Indian National Trade Union Congress wants the old system of verification to continue. All other organisations favour the secret ballot to determine the strength of unions. The Hind Mazdoor Sabha and the Bhartiya Mazdoor Sangh, the UTUC (LS), NLO and NFITU have a somewhat flexible approach and would appear to reconcile to a decision to stick to the present system. The All India Trade

Union Congress and the Centre of Indian Trade Unions however are irrevocably for the secret ballot The last effective general verification in the country was done in 1968. Since then representation of trade unions on national and international bodies has been decided on ad-hoc considerations which, at times, led to considerable friction. Similarly, a decision on the determination of bargaining agent at the industry and unit level is pending. A tripartite committee set up by the National Labour Conference in September 1982, recommended the operation of the check-off system on the basis of written authorisation from every employee. The authorisation will be for a period of three years which is also the period recommended for recognition of the bargaining agent

The right to strike

The constitution of an Industrial Relations Commission (IRC), independent of the executive, to deal with conciliation, adjudication of industrial disputes and certification of unions as representative unions, is the pre-requisite of the proposed system. The establishment of such a commission is likely to put an end to the fears of trade union organisations, of government interference in the process of determining the strength of unions The setting up of the IRC was also the recommendation of the National Commission on Labour and has to be taken seriously in the interests of establishing good industrial relations. The minimum following required for recognition of a union is a matter of detail on which it should be possible to arrive at a consensus Under the present system, any union can challenge a bipartite settlement by means of an industrial dispute This has been acting as a serious impediment to collective bargaining Settlement arrived at between the employer and the collective bargaining agent, should not be open to challenge during its period of validity. Under the present arrangements, workers can resort to strikes at any time. Even in the case of public utilities where 15 days notice is necessary, there are instances of strikes without notice There are wild cat strikes and work stoppages on flimsy grounds. In order to put an end to these unfair labour practices a system of strike ballot has been suggested Workers in an establishment should resort to strike only if the results of the ballot show that not less than 60 per cent of the workers support the strike. Additionally, there should be a notice period for public utilities. Similarly, no lock-out should be declared by an employer unless collective bargaining has failed, and it is otherwise permissible under the law. As it is, workers can be prosecuted for resorting to illegal strikes and employers for illegal lockouts. In practice, there has been no prosecution even for strikes in public utilities. This unwillingness to enforce the law has also contributed to indiscipline in industry. All these are vital issues which determine the health of the industry in the country. Before embarking on legislation it would be adviseable to have a national debate where the pros and cons are thoroughly discussed and a concensus evolved

Wages and employment

Organised Sector : Wages play an extremely important part in industrial relations and at least half of the total number of disputes relate to this area. In recent years, the public sector has come to dominate industrial employment. In fact, employment in the private sector has remained stagnant around 75 lakhs Employment in the public sector stood at 164 lakhs in 1983. The public sector includes practically all heavy industry, energy and financial institutions Therefore, wages in the public sector are an important factor in determining infrastructure as well as commodity costs. The practice in the public sector is to revise wages every three or four years The Bureau of Public Enterprises under the Ministry of Finance lays down guidelines regarding wage revision for the central public sector The Bureau had decided on a 10 per cent ceiling on wage increases The November, 1983 agreement in Coal pushed up wages by as much as 20 per cent with retrospective effect from 1st January, 1983 The Coal industry is the largest employer in the public sector with nearly 7 lakh employees on its rolls A September 1984 agreement pushed the wages of nearly 6 lakh employees in banks, up by 14.6 per cent The increase was to operate retrospectively from July 1983 An April 1984 agreement raised the wages of port and dock workers by 16 per cent In none of these cases was the wage hike related to work performance or productivity. Wages and wage related costs constitute 55 per cent of the average cost of raising coal Barring slight improvement in a few mines, coal output per manshift has generally declined. The price of coal had to be pushed up following the wage hike The banks covered by the wage agreement made a profit of 84 crores in 1983 The wage increase of 1984 is estimated to cost an additional Rs 130 crores a year. Freight charges in Indian posts are among the highest in the world. The cost of handling a 20-foot container at Bombay port is $ 350 compared with $ 75 at Singapore, $ 60 at Hongkong and $ 50 at Colombo. The proportionately larger number of labour deployed for the same task in Indian ports is an important component of this cost. This analysis shows that BPE guidelines have little relevance to actual wage agreements in the public sector Quantum of increases depend on the convenience of parties and is unrelated to work performance or productivity. Then again, there are four year agreements in some industries and three year agreements in some others like ports and docks In the absence of an effective mechanism to protect real wages, the occasion of wage revision is primarily used to counteract the effects of inflation on wages The dearness allowance system as it operates, today is supposed to fully neutralise the price rise only at the lowest level. A proposal to increase the rate of neutralisation beyond the Rs 1.30 per point of rise in the index, has been stymied due to disagreement

between unions on the one hand and public sector employers on the other.* The result of all these in a chaotic situation in public sector wage settlements If the purpose of wage settlements is to counter the rise in consumer prices, it would be better to admit the position and to work at a uniform policy for the entire public sector. The present system of inconsequential BPE guidelines and so-called collective bargaining leading to work stoppages in vital sectors, has done a lot of harm to the economy. Wages in the public sector should be revised uniformly and at the same time, for all industries. Productivity in an industry depends not only on labour but on many other factors. In the fertiliser industry, for example, productivity depends on the technology in the particular plant. The age of the plant is also material There cannot, obviously, be different wage rates in different plants under the Fertilizer Corporation of India for workers engaged on the same job. In order to develop individual as well as group initiative, to improve quality and cut costs, incentive schemes will have to be worked out plant-wise. These should not form part of the general wage agreements

Consumer Price Index

While on the subject of wages and neutralization, it would be pertinent to dwell on the question of consumer price index. The index followed at present has 1959-60 as its base year. This is the year during which the family income and expenditure survey was done. Prices, consumption pattern and consumer baskets relate to this year The International Labour Organisation recommends fresh family income and expenditure survey every five years In India a survey was conducted in 1970-71 The series was ready sometime in 1974 but there were objections from trade unions to the manner of compiling the Index. A tripartite committee under the chairmanship of Professor Nilakanth Rath was set up in 1977 to look into this matter. The Rath committee found the system adopted in compiling the index to be generally satisfactory but pointed out certain deficiencies in the completion of the house rent index and off take from ration shops. Correcting these deficiencies was estimated to send the index up by about 6 points The committee recommended correction of the 1960 series and switching over to the 1971 series with appropriate adjustments The Rath committee's report was not acceptable to government A committee of experts was constituted by government in 1980 to look into all matters relating to a fresh family income and expenditure survey to be started in 1980-81. The committee submitted its recommendations in 1981 On house rent index the expert committee's recommendations are an improvement over those of the Rath committee. Regarding off-take from ration-shops, the recommendation is similar. A decision on the committee's recommendation is yet to be taken While the Labour Bureau which compiles the consumer price index is ready with the 1981 series, the country continues with an outdated 1960 series. Consumer baskets and consumption pattern of the working class have substantially changed during the intervening decades.

Wages and employment in unorganised sector

Among all labour laws the Minimum Wages Act affects most labour including agricultural workers. This law has a very important role to play in bringing people above the poverty line. It's implementation however has been very poor both in the central and state spheres and needs to be improved. The primary reason why wages tend to remain below minimum is the large unemployed and under-employed labour force in the rural areas. According to the Sixth Plan, document, including the 1980 backlog, total unemployment in the age group of 15-59 at the end of the plan period was 87.66 million. About 10 per cent of this labour force is educated manpower. This leaves about 70 to 80 million unemployed labour competing for the existing number of jobs. The effect is that the minimum wage is pushed down below the statutory level The Integrated Rural Development Programme (IRDP), the National Rural Employment Programme (NREP) and the Rural Labour Employment Guarantee Programme (RLEGP) are specially meant to meet the unemployment situation in the rural sector. The plan provided Rs 4500 crores for the IRDP. Out of this, Rs 3000 crores was to come from financial institutions Three thousand poorest house-holds in each block, or 15 million families in the country, were to be identified on the basis of assets, income and caste (S C and S T.). The District Rural Development Agency was to investigate their economic problems and formulate suitable schemes to raise their income and employment levels. Evaluatory studies have revealed considerable shortfall, and other inadequacies in implementation. But the fact remains that for years to come, the IRDP, NREP and RLEGP will remain the main schemes for generation of employment in the rural economy.

Bonded Labour

While dealing with the employment situation in the rural economy, the problem of bonded labour has to be discussed. There have been many attempts to estimate the number of bonded labour in the country. The Gandhi Peace Foundation report of 1981 put the figure at 26.2 lakhs. Government goes by the total of bonded labour identified by various state governments. This total was 1.67 lakhs by June 1984 The number of labour identified by state governments has progressively declined. In fact, in many states, there has been no fresh identification in recent years. This does not mean that problem of bonded labour is no more. On the other hand, with increase in unemployment there would be more cases of bondage. Identifications have tapered off because there is not adequate attention by the

*The dearness allowance neutralisation rate for public sector emloyees has since been raised from Rs. 1 30 to Rs. 1.65 per point from April, 1985.

district and sub-divisional committees to the problem. The IRDP and other schemes are meant for the poorest of the poor. It is precisely to this class that the bonded labour belong. There should be effective linkages between bonded labour programmes and IRDP, NREP and RLEGP. If the poorest families in every block are covered, the bonded labour families would also be covered. It would be a bad commentary on the selection process if the bonded labour families are left out.

Workers participation in industry

India is perhaps the only major industrial country where an attempt was made to introduce workers participation through legislation. Section 3(1) of the Industrial Disputes Act requires the setting up of works committees. Workers' representatives on the committee are to be elected. Multiplicity of unions owing allegiance to different political ideology and the inbuilt resistance of the Indian employer to the institution have made works committees defunct in almost all industry. Preoccupation of employers and trade unions in the public and private sectors has been with the determination of wages. These are settled through collective bargaining which is out of the ambit of works committees. The Indian Labour Conference of 1957 decided to push through the concept of Joint Management Councils. There was, however, little enhusiasm for the scheme from both unions and management and by 1968, it was operating in only 131 out of 18000 establishments in the country. The National Commission on Labour which studied the working of Joint Councils and Works Committees, found both to be ineffective. In 1975, the Government of India notified a scheme for worker's participation in industry. The scheme was applicable to manufacturing and mining units in the public, private and co-operative sectors as well as industries run departmentally and employing 500 or more workers. In January 1977 another scheme was introduced to include the commercial and service sector. Both these were susperseded by a new scheme for workers participation in management announced by government on 30th December, 1983. The scheme is applicable only to public sector undertakings under the central government. This is a major cut back over the earlier scheme which had taken care to include departmental undertakings. Because of this exemption a large chunk of industry, which includes railways and posts and telegraphs which employ million of persons and have mass contact with common people, are out of the operation of the scheme. Further, with its preoccupation with shop and plant levels, the scheme leaves out the commercial and service sector like banks and insurance which deal with thousands of consumers every day.

The government notification of 30th December 1983 spells out details of the scheme. The scheme is to operate at the shop and plant levels. There is provision for introducing it at the board lavel later. The scheme provides for a representative arrangement for participation at the shop level. The arrangement will be arrived at by employer and workers through consultations. There is equal representation for workers and employer at the shop floor and plant levels. The notification says that in persuading union leaders to reach a consensus, the management may point out that in the absence of consensus, the scheme would not be capable of implementation. Given the multiplicity of unions and their antagonistic postures towards each other, this would make the scheme a non-starter in a number of establishments. The government notification lists out as many as twenty seven functions for the participative committees but the objectives are not clear. The primary objective of participation by workers in industry whether in Japan, United States or Sweden has been to keep the industry competitive. For this purpose the effort has been concentrated towards improving the quality of the product and and cutting down costs. The worker has to identify himself with the product and there must be the desire to excel. The work group becomes the primary participation unit. Although participation is voluntary, the effort is to involve each and every worker. There is no question of confining participation to elected representatives of workers and management. The supervisor forms part of the group. The question of parity in numbers between management and workers does not arise. Workers are trained in multiple skills. The basic processes of participation namely, joint decision making and delegation of authority backed by provision of information occurs effectively in the group. Representative participation may be suitable at the plant level and higher levels. International experience in higher level participation is limited to Yogoslavia which operates under a different system. Our own experiment in the banking industry has achieved little. The government schemes of 1983 include a wide variety of subjects like problem of women workers, social security, supervision of training programmes, sports, games, housing, gambling, drinking etc. which are not directly related to work problems. Most of these matters come within the purview of collective bargaining and had to be specifically kept out of the worker participation system in order to gain acceptability by unions. To add to confusion, we have major public sector undertakings claiming implementation of the government scheme through quality circles. Incorporation of the representative system into an essentially voluntary arrangement of quality circles is an interesting development. No less interesting is for quality circles in Indian industry to discuss problems of women, gambling, drinking, housing and pollution. There is therefore a large area of confusion regarding the working of the programme. The main draw back however will be the non-competitive character of public sector industry The urge to excel, improve quality and cut down costs will be lacking in such circumstances. □

Nuclear Energy : some issues and choices

(Part 3)

Shibdas Burman

In this series, the author compares performances of Candu and some of its rival reactor systems. According to the available data, the nuclear industry situation in USA, which mostly uses BWR and PWR systems, seems to be in trouble. The need, he emphasises, is for depending on the recent knowledge of the seismicity of India and the neighbouring regions as one of the factors for the selection of sites of future stations.

IN THE PREVIOUS section we discussed some of the interesting and important developments concerning the Candu reactor, namely, uranium conservation, replacement of heavy water as coolant by another liquid, etc. Some problems in connection with the development of fast breeder reactor were written about. We continue the discussion by looking at the performance of the nuclear reactors of various countries. The basis of Candu reactors was laid when in 1940 Halban and Kowarski had showed that a divergent chain reaction was possible in a system of uranium oxide and heavy water.

We start with some data presented below. The Tables (6—11) and observations are from Lord Bowden's May '83 and October '83 reports presented to Sir Frank Layfield, Q.C. for the Sizewell Enquiry in U.K. These tables show the performance of Candu reactor viz-a-viz those of other reactors. According to Lord Bowden's report, "Ontario Hydro made a detailed assessment of the cost of building a PWR in Ontario—as compared with the cost of a Candu on the same site. They concluded that the costs would not be very different, but the fuel for a Candu is so much cheaper than that for a PWR that by the end of the first year's operation, Candu would be found to have been much cheaper, and the discrepancy would mount every year. When they did this calculation they assumed that their PWR would be 10% more reliable than any of those now in existence. In other words, they gave the PWR the benefit of the doubt whenever they could, but they could never make it rival their Candu set."

The views expressed here are those of the author and not those of the office where he works.

Comparative performance

Regarding exposure of operators to radiation, in case of Light Water Reactors (presumably both the PWR and BWR in the USA) it is 1.3 Man-rem/MW. ("An overview of the Nuclear Industry's experience in the USA", by E.D. Harvard, Nuclear Engineering International, January 1981). The corresponding figure for the Candu sets has been 0.25 Man-rem/MW. This figure was derived by Ontario Hydro as an average for 9 units (rem is dose to the body; 5 rems is the legal maximum per year for workers in the nuclear industry).

Both PWR and Candu use uranium as fuel water as the moderator, but a reactor will not work with the ordinary water and the ordinary uranium. In the Candu system the water is modified. The USA uses fuel which has been modified in special plants. The enrichment of uranium is more difficult and more dangerous than the production of heavy water; besides, the enrichment of uranium uses a great deal more power. That is why the fuel for PWRs is expensive, and that is why the Canadians have no plans, says Bowden, to enrich any uranium, although they know their Candu stations would use less uranium if they did.

Table 6 shows the cumulative station generation to the end of 1981. It shows that Pickering A (Canada)

has generated more power than any other nuclear station in the world. No 2 in the list is in Japan. Table 7 depicts the Lifetime (upto the end of 1981) reliability of Pickering A and Bruce A stations in Canada. It may be seen that the steam generating tubes in Candu sets have worked much better than others; the defect rates for Candu being 0.02% as against the defect rate of 2.0% for the PWR.

Table 8 lists the world's ten best reactors of sizes 150 MW and larger (lifetime to end of 1981). It may be noted that the Candu sets occupy five positions out of the top ten slots. Table 9 details the world reactor performance in 1981 for sets bigger than 500 MW. The Candu sets occupy the first six positions and 7 positions out of the top ten cases.

Table 10 depicts the lifetime capacity factors to December 1982 for the top 10 positions—out of 153 reactors over 500 MWs. The Candu reactors account for 7 out of first 10 places.

Table 11 details units over 1000 MWs. It can be seen that none of the very big reactors on this list has done very well The big stations become status symbols and they loose much of their value if they do not work when they are needed.

According to a calculation made by Lord Bowden with net capacity factor 79% (Candu) and 68% (PWR), it is shown that the Candu set is cheaper at the end of the first year, even though when the sets are switched on the PWR has cost less than the Candu. The Candu set becomes cheaper at the end of the first year because of the heavy fuel cost for the PWR.

The USA situation

Writing in the Chemical and Engineering News (September 20, 1982) Earl V Anderson answers with a straightforward answer "Yes" to the query if the nuclear power industry in the USA has a future But to the question as to what kind of future the industry has and replies that the answer is hazy at best. The present problems of the industry in the USA range from construction delays, slowing electricity demand and huge capital costs to lead to public disenchantment, with result that the outlook is hazy at best.

Earl V. Anderson's study quotes data released by the U.S. Department of Energy. Out of the total 165 new plants to boost nuclear power capacity of 158,0007 MW, the Boiling Water Reactor types account for 56 plants and the Pressurized-Water Reactor types for 105 numbers. Among the rest is one high-temperature gas cooled reactor (Fort Saint Vrain) and one liquid-metal fast breeder reactor (Clinch River). The LMFBR project at Clinch River has subsequently been dropped. Since 1978, not a single order has been placed for a nuclear power reactor. Even the optimistic nuclear industry officials do not except new domestic orders before the 1990s. The reformists in the USA concede, according to Mark Hertsgaard (Bull. of Atcmic Scientists, Oct 1984, that nuclear power is not as safe as it should be, but they say that it is not too late to correct the safety and design errors of the past. They believe that developing a standardized reactor that is substantially safer than today's models is essential before a revival is politically or economically possible, continues Hertsgaard. On the other hand, the hardliners want the government to order an immediate fullscale reduction in what they believe are redundant safety regulations—regulations they hold responsible for having ruined nuclear economics. This is how, writes Hertsgaard, the atomic brotherhood, the network of big corporations and government agencies that runs America's nuclear facilities, is split over revival strategy of nuclear industry in the USA

David Freeman, the Managing Director of the Tennessee Valley Authority, which for many years was the best customer for the American Nuclear Power Industry, has become disillusioned and in November 1982 he attacked the industry very bitterly. He states, " in short, the cost of a new nuclear plant isn't just high, it's unpredictable. No sane capitalist is going to build something for which he can't derive a cost/benefit ratio because the cost is unknowable. That's why the Nuclear Industry is in the doldrums....If the nuclear industry does not make the necessary investment in exploring diffeient systems and technical advances, it will bear the ultimate responsibility for the death of Nuclear Power." (quoted by Lord Bowden, May 1983).

The history of nuclear reactor cancellations throughout the United States is a long one. Between 1972 and 1981, plans for 84 reactors with a net capacity of 89,972 MW were cancelled. Further, during the first half of the year (1982), another eight reactors (9900 MW) were scrubbed by four utilities (C&EN, September 1982).

Mark Hertsgaard quotes a study by the economist and nuclear critic Charles Komanoff, Komanoff conservatively estimates the US national economic damage caused by the generation of nuclear plants now being constructed at US $65 million to US $100 billion. This figures includes roughly US $15 billion invested in plants that have already been abandoned, US $20 billion to US $40 billion in plants likely to be cancelled before completion, and US $30 billion to US $40 billion for power plants that will come on-line after sustaining such huge cost overruns that their electricity will cost much more than that from fossil-fueled plants. Hertsgaard states that the American taxpayers have already provided over US $40 billion to the nuclear industry through various subsidy programmes.

Hazards

The U.S Nuclear Regulatory Commission has drawn attention to one major hazard. The embrittle-

ment caused by radiation, of the steel shells of 13 American reactors has proceeded so rapidly that some of the plants may be unsafe to operate by the end of 1982, and in any case will require substantial repairs. In all, 46 operating U.S. plants have this problem according to Sidney T. Fisher. (Sidney T. Fisher, *Long Range Planning*, v. 16, n.1, 1983).

Sidney T. Fisher (LRP, 1983) reports further about radiation affects on the cylindrical steel reactor pressure vessel (8 in. thick and 40 ft. high, for example) that surrounds the uranium core where the nuclear chain reaction takes place. Once a plant is put on operation this vessel cannot be replaced and must remain fault-free till the end of its life, around 40 years. Although embrittlement by neutron radiation was foreseen during the design phase of these plants, it is developing far faster, according to S. T. Fisher, than expected. Failure would result in the loss of coolant, which could lead to meltdown of the core and a catastrophic accident. Fisher opines that "it seems likely that a number of reactors throughout the world may have the potential weakness uncovered in the U.S"

Site selection

The siting of the plant is very important One factor that we would be interested to consider in this essay is the seismicity of India. Obviously, the plants should rest on the foundation of stable bedrock. Many parts of the Indian subcontinent have high seismicity. K. N. Khattri et. al. in Tectonophysics, 108 (1984), pp. 93-134) give all the epicenters of the historical shallow (h, the focus, at less than 70 km depth) earthquakes in the region. In the past 80 years seven catastrophic earthquakes of magnitude greater than 8 have occurred in the western, northern and eastern parts of India and adjacent countries. By contrast, Peninsular India is relatively aseismic, having had only infrequent earthquakes of moderate intensity. The main seismic belts are associated with the collision plate boundary between the Indian and Eurasian plates which is marked by the Kirthar Sulaiman, the Himalayas and the Arakan-Yoma mountain ranges.

Figure 3 (Khattri et. al. 1984) shows the seismic hazard map for Indian and neighbouring areas showing peak ground accelerations in rock (in percent g, g being the acceleration due to gravity), having a 10% probability of being exceeded in 50 years. Earlier, K L. Kaila, V.K. Gaur and Hari Narain (Bull. of Seismological Society of America, v. 62, 1119-1332) prepared quantitative seismic maps of India based on A and b values (log N = A —bM where N is the number of observations, M is the magnitude and A and B are constants) from shallow earthquake data The siting of future stations should be decided, interalia, on knowledge based on the most recent scientific studies of seismicity of the country.

Table

Cumulative station generation to end of 1981

Rank	Country	Station	Station Size (Gross MW)	Start-up Dates	Cumulative Generation (Million MWH Gross)	Lifetime Load Factor
1	Canada	Pickering A	2168	7/71 to 6/73	148 85	79 6
2	Japan	Fukushima 1	4696	3/71 to 10/79	120 43	55 8
3	USA	Oconee	2733	7/73 to 12/74	114 38	58 7
4	USA	Brown's Ferry	3294	8/74 to 3/77	109 52	55 7
5	USA	Dresden	1881	8/60 to 10/71	107 74	51.4
6	Canada	Bruce A	3164	9/77 to 1/79	94.64	79 0
7	USA	Peach Bottom	2196	7/74 to 12/74	90 38	58 9
8	France	Bugey	4388	4/72 to 12/79	89 19	59 3
9	USA	Zion	2170	10/73 to 9/74	87 69	55 6
10	USA	Quad Cities	1666	8/72 to 10/72	84 24	59 4

Pickering has generated more power than any other Nuclear Station in the world No. 2 on the list is in Japan. If it had worked as well as Pickering, it would have generated 10% more power, but in fact it generated 20% less

Sources : Nucleonics Week, 28 January 1982
Nuclear News, February 1982

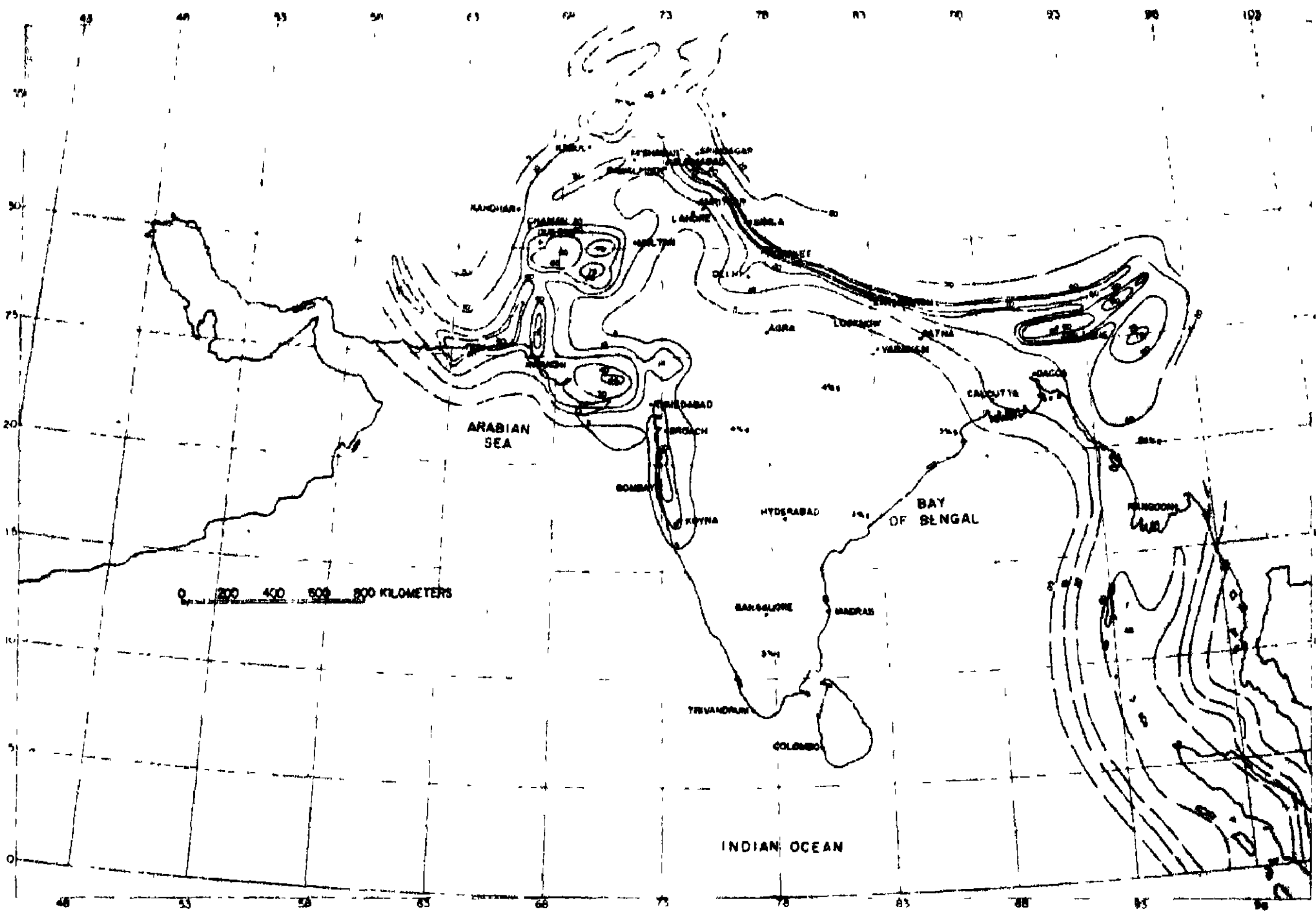


Fig 11 The seismic hazard map for India and neighboring areas showing contours of expected peak accelerations in rock in percent g The exposure period for this map is 50 years The probability of exceedence of the mapped accelerations in 50 years in 10% The return period of the peak acceleraions is 475 years

Table 7
Pickering A and Bruce Lifetime Reliability

Pickering .	*Bruce*
4 units, 37 6 reactor years	4 units, 15 5 reactor years
capability factor 80.2%	incapability factor 83 4%
incapability factor 19 8%	capability factor 16 6%

Cause of Incapability	Pickering A** Incapability (percent)	Bruce A Incapability (percent)
On-load fuelling . . .	0.8	0 8
Fuel	0 1	0.0
Heat transport pumps .	0 2	0 2
Pressure tubes	4.9	0.3
S eam generators	0 5	2.4
Turbine and generators . .	5 8	6.6
Instrumentation and control .	0.7	1.7
Heat exchangers	0 9	0.0
Valves	0.4	0.0
Other	5 6	4.5

*Lifetime means since in-service date of each unit to the end of 1981.

**Pickering figures include a four-month strike in 1972 (Unit 1 to 3 were shut down)

Note Steam Generator Tube Defect Rate

The Steam Generating Tubes in CANDU sets have worked much better than any others—

The detect fates are .

CANDU . .	0 02%	61 defects in 300,600 tubes
PWR . .	2 0%	20,504 defects in 1,014,370 tubes

PWR defects 100 times greater than those in case of CANDU

Table 8

World's Ten Best Reactors

LIFETIME TO END OF 1981. 150 MW & LARGER

	Station	Country	Type	MW Gross	Lifetime Load factor %
1	Bruce 3	Canada	CANDU	791	83.9
2	Beznau 2	Switzerland	PWR	364	83.4
3	Hunterston A	UK	Magnox	169	83.0
4	Stade 1	FRG	PWR	662	82 0
5	Pickering 2	Canada	CANDU	542	81.6
6	Bruce 4	Canada	CANDU	791	80.2
7	Pickering 1	Canada	CANDU	542	80.1
8	Obrigheim	FRG	PWR	345	80.0
9	Pickering 4	Canada	CANDU	542	79.3
10	Point Beach 2	USA	PWR	542	78 6

Source : Nuclear Engineering International, March, 1982.
This table refers to the Hunterston Reactor which worked very well.
All the other tables refer only to the bigger reactors 500 MW and above, and therefore exclude Hunterston

Table 9

World Reactor Performance 1981

SETS BIGGER THAN 500 MW (e) in MERIT ORDER

Country	Type	Capacity Factor (Percent)
1. Canada	Candu	96.6
2. Canada	Candu	91.6
3. Canada	Candu	89 6
4 Canada	Candu	89 5
5. Canada	Candu	89.4
6 Canada	Candu	89 1
7. Japan	P.W.R.	89.0
8 Canada	Candu	88.0
9. Taiwan	B.W.R.	87 3
10. U.S A.	P.W.R	84 9

Source : Comparison of world power reactors, Ontario Hydro NGD 12, April 1982

Note The six best in the world are all Canadian The best station in the U.S.A. is 10th on the list.

Table 10

The lifetime capacity factors to December 1982 for the top 10—

OUT OF 163 REACTORS OVER 500 MWs

Factor (%)		MW		
Bruce 3	826	86 8	Canada	AECL
Bruce 4	826	84.2	Canada	AECL
Stade 1	662	83.1	Germany	Siemens
Pickering 2	542	82.7	Canada	AECL
Pickering 4	542	83.2	Canada	AECL
Bruce 1	826	80.6	Canada	AECL
Pickering 1	542	80.2	Canada	AECL
Point Beach	524	79 0	U.S.A.	Westinghouse
Pickering 3	542	78 4	Canada	AECL
Genkai 2	559	78 3	Japan	MHI (Mitsubishi Heavy Ind)

Table 11

The performance of reactors for units over 1000 MWs.

Unit	MW	Factor (Percent)
Indian Point 3	1000	46.8
Zion 1	1035	57.3
Zion 2	1035	54.2
Cook 1	1093	63.0
Cook 2	1136	64.3
Salem 1	1135	45 8
Salem 2	1158	59.1
OHI 1	1175	55 9
OHI 2	1175	39.1
Trojan	1178	7.6
Sequoyah 1	1183	45.8
Sequoyah 2	1183	48.7
Mouire 1	1220	35.6

TOWARDS SOCIAL REVOLUTION
a Case for Economic Democracy
VASANT SATHE

A Serialisation 18

Prospects for the future

The human species as a thinking species has a twofold objective: first, survival; and second, higher evolution, through knowledge. In the entire process of evolution, while man has been trying to secure himself against want, he has at the same time been trying to know more about the world around him. He has been trying to find out the source and cause of all creation. He is constantly discovering and inventing something new. Thus his mental faculties are continuously evolving, and yet man is haunted by a certain primordial sense of insecurity, arising mainly from a fear of application.

Every thinking person, whatever be his position, knows the danger involved in launching a nuclear war. Yet, in the very slender hope of being the first to strike and thus overcome an adversary, an arms race costing virtually trillions of dollars per annum continues. Even if someone were to assure the people and the authorities concerned that there would be no fear of any one pushing the button to trigger off a nuclear holocaust, still the very fact that someone else has an atomic weapon becomes the motivation for wanting to have a more destructive one.

In the Indian pantheon, there is a concept of evolution more or less identical to the Darwinian concept. Beginning from the amphibian phase, evolution has come to the post-Buddha period and the last phase of the human cycle is conceived as the one where the incarnation called Kalki is shown riding a horse and destroying the whole universe with a holocaust having the power of a thousand suns and after that the cycle of creation will start all over again. Which horse rider or which trigger-happy cowboy could press the button is a matter only to be guessed at with gasping apprehension. The greatest peril to the human race comes from these so-called practical and pragmatic men with tremendous power who are at the helm of affairs of nations and who are in a position to blow up the entire planet. All of them resort to the highest platitudinous and populist phraseology, using terms like peace and prosperity, service to the whole of mankind, abolition of poverty, hunger and disease, and universal brotherhood. All this is done in the name of god and his prophets and yet the moment the leader convenes a small committee consisting of his fellow administrators, including generals, industrialists or traders dealing in arms, he becomes a different man. There he would not only argue but plead for and vehemently support the idea for the production of weapons which may, irrespective of their cost, supposedly guarantee the elimination of the enemy before the enemy could destroy his country.

These great men of power, as also some scientists and industrialists, are now thinking of finding new habitats—on the moon or in space towns or in forlorn regions like Antarctica—in the hope that at least a few of them could survive the holocaust or pralaya. In the context of universal totality, even blowing up of the whole earth will be like blowing up a small particle of dust. In that sense, nothing will really change and, yet, those who talk or think in terms of this holistic cosmic approach also want the human race to survive and evolve further. Being a master in the material sense is often confused and commonly understood as wanting to own everything that one desires and, yet, when one knows from experience that there are events which happen or take place in spite of one's wishes, then the concept of being able to own and control them becomes nugatory. Being a master in the spiritual sense therefore entails the capacity to use knowledge and information to adapt the environment to the best purpose and at the same time to be able to steadfastly face the calamities which may result in spite of all precautions. This would be the approach of scientific spiritualism which would give man the confidence, in a very fundamental sense, to be the master of himself and of the whole universe.

How to save 1 million a minute

When I plead for a movement of the entire mankind under the aegis of the United Nations, I wish to invite the attention of the vast majority of humanity, living in the USA, the Soviet Union, Europe, Asia, Africa, Latin America and Australia, to the fact that in the event of a nuclear catastrophe, only a very few, probably only the leaders, may be able to shift to almost inaccessible habitats and millions of people, who may not be able to leave their homes would be surely annihalated It is pertinent to remember that it is in the name of these very people and by securing their mandate or support that the so-called leaders (and mainly those who dominate the armament industry) are constantly engaged in a mad race to create more and more deadly weapons. In a recent newspaper report, it has been mentioned that the world today is sitting over 50,000 nuclear warheads, with a combined strength of one million Hiroshima-type bombs While 40,000 children die of hunger and malnutrition every day, the world spends one million dollars every minute on arms! It is, therefore, time for the people throughout the world to sit up and think in the interest of their own survival whether they can cry halt to this madness Given the necessary will, backed by a proper movement of the whole human race, it is possible to convert the United Nations itself into a federal government of the new 'one world' The entire stockpile of arms could be frozen All the armaments of various member-nations could come under the goverance of the world federation very much as they are under the goverance of a federal nation like the USA or a Communist nation like the Soviet Union The concept of national sovereignty in today's world has itself become a meaningless and narrow concept and the interests of the people of particular nation-states will in no way be eroded if the arms of the whole world were pooled and placed at the disposal of the one-world federal authority, mainly for policing purposes Then there would be no fear of catastrophic was between the states, just as today there is no fear of one federating state launching a war against another in the USA or, for that matter, in the Soviet Union. But there is so much psychological frenzy created by certain nations that people are not even willing to consider the stoppage of arms production Keeping in view the pace with which science is developing, squeezing distances, it is time people start thinking seriously to put a halt to arms manufacture. It is hoped that the intellectuals will give a lead, but it is our experience that the ordinary people have greater common sense. That is why I have been pleading, in my own humble way, not only with the leaders of India but with leading persons at the United Nations, to create a movement with certain specific objectives when we shall usher in the twenty-first century This movement involve mainly the youth of the entire world for whom the future is highly significant. A series of twenty-first century clubs should be formed as a part of the twenty-first century movement. I do not see why this movement should be considered difficult for it does not involve any financial burden either on the United Nations or any member-state. The people themselves would start the clubs. All that they would need is the support and guidance of the United Nations. This is necessary as a token of the will of the leaders of mankind who have gathered together in this world forum. But like governments of different states, even this world body is engrossed mainly with immediate day-to-day problems, which is only natural. But if the world leaders cannot comprehend the basic issue of the survival of the human race, they will not be able to resolve even their immediate problems either.

Everyone agree that today science and technology have given mankind the power to solve the basic problems of poverty such as want of food, clothing and medicine and housing only by properly utilising the available human and material resources of mother earth. Everyone knows that even a small fraction of the amount spent on the insane arms race can help in solving the problems arising due to poverty and disease For instance, the money could be used for a project to link the rivers of a fertile land like that in India. Consequently, India would become a granary which could not only feed its own growing population but also supply foodgrains to other needy nations. The same could be done in the vast continents of Africa and South America Can these be considered impossible dreams when the alternative is total annihilation of the human race? The future, therefore, lies in not being fatalistic and not leaving the job of running the affairs of the human race to a few scared, selfish and double-thinking leaders, whether in the field of politics or industry The primary duty rests upon those who have the education and therefore the capacity to think in the larger universal perspective At least, they must not waste their intelligence and energy by being involved in superficial issues. While these issues have to be resolved, it is for them to put their heads together and give a lead to their less fortunate fellow human beings in the interest of the survival of the entire human race There is no problem which is not capable of solution if there is a sufficient and strong will.

I have in this book tried to propound a model which could create conditions for a participatory economic democracy, going side by side with political democracy, ensuring involvement of the whole people to bring about a balanced growth of the entire society I do not claim that this model is a perfect one or it is the ultimate one, because indeed there can be no such thing as the ultimate. because there would still be something left after the whole planet has been blown up. When rational minds get together and start thinking freely without bias and prejudice, without ulterior motives, without trying to be smart and without wanting to be one up, I have no doubt that even this model could be improved upon and together

the fortunate ones could help in creating a new and more beautiful world for all members of the human family to live in.

I have already said that I have been influenced in my thinking by Gunnar Myrdal and Raul Prebisch. However, the person who influenced by thinking the most right from my childhood has, of course, been Jawaharlal Nehru. Although the economic model of participatory democracy proposed is, for all its merits and demerits, mine, I have ventured to develop a model most suitable to the developing countries.

In my own humble way, I have been constantly thinking of how the entire human family could be motivated not only to ensure its survival but also to create a better future for the whole human race. Some time in 1970, I had written a letter to the Prime Minister of India, Mrs. Indira Gandhi, making a suggestion for launching a 'twenty-first century movement' in the form of 'twenty-first century clubs'. She was kind enough to include me as a delegate to the Silver Jubilee Session of the United Nations General Assembly, where I had led the Indian delegation in the Third Committee. I was at the United Nations for nearly two and a half months. During the period, I had taken up this suggestion with the then Secretary-General, U-Thant. I had discussions with Director Robert Muller and I had also another occasion to discuss it with U-Thant. He had told me that he found the idea interesting and useful and if he were to continue to be the Secretary-General, he would try to do something about it, but his advice was that the United Nations being primarily an inter-governmental organisation, it would be better if some member-state were to take up the matter and he had suggested that the Prime Minister of India, Mrs. Indira Gandhi, herself may consider taking an initiative on this proposal.

I had conveyed this advice to Mrs. Gandhi, but she had probably felt that the time was not yet opportune when a proposal like this, coming from India, would get a favourable response The matter, therefore, rested there.

Soon after, in 1972, again due to the kind support of Mrs. Indira Gandhi, I was elected to the Parliament in a bye-election from the Akola constituency of Maharashtra. I had again then taken up this proposal with the then Secretary-General Kurt Waldheim and there was a correspondence on this subject with the officials of the United Nations. □

(Concluded)

Growth of automotive in sixth Plan

The growth of automotive sector in the Sixth Plan period was considerable. The two-wheeler production increased from 3,19,000 in 1979-80 to 9,11,000 in 1984-85, three-wheeler production from 17,000 to 43,000, car production from 33,000 to 77,000, jeep production from 12,000 to 24,000, commercial vehicle production from 59,000 to 93,000 and tractors from 62,000 to 85,000.

The productions of Seventh Plan Working Group indicate a similar growth potential for the Seventh Plan.

Rural electrification achieves over 100 per cent target

A GROWTH rate of over 100 per cent has been achieved in rural electrification schemes under the Rural Electrification Corporation Limited. During the last five years, the number of villages electrified more than doubled. In 1979-80 the number of villages electrified were 71,794, in 1983-84 154,000 villages were electrified. By the end of December 1984, the Rural Electrification Corporation had provided electricity in over 62 per cent of the villages. Forty-six per cent of the villages had pumpsets energized for greater irrigation facilities

This intensive programme of rural electrification made an impact on other fields of development, leading to increased food production, promotion of rural industries and has generated fresh opportunities of employment.

Over 46 lakh hectares of additional land were brought under irrigation as a result of pumpsets energization. Food production increased by 21.2 million tonnes.

In the field of employment generation, more than 152 crore man-days were generated in the agricultural and *industrial* sector.

Over 78 per cent of the total financial assistance given by Rural Electrification Corporation disbursed to under developed and backward areas. The Corporation financed 741 projects for electrification for tribal areas and 617 projects to electrify Harijan bastis This involved an assistance of Rs. 470.33 crores

In the Seventh Plan, it is envisaged to electrify all of the anticipated balance of 2.03 lakh villages and energize above 30 lakh pumpsets.

The Rural Electrification Corporation was established in July 1969 with the principal objective of promoting integrated rural development through electrification. □

Performance of public enterprises in 1983-84

Yojana Correspondent

THE GOVERNMENT IS TAKING a fresh and close look at the continuously losing enterprises and also at the policy for public enterprises as a whole to find out how best further improvements in their performances could be brought about. This was stated in the Public Enterprises Survey 1983-84 made by the Bureau of Public Enterprises.

While looking for possibilities and scope for improvement, the report says, the major thrust of the Government was directed towards removing the constraints on availability of basic and essential inputs like power and coal.

Investment

The investment in public enterprises has grown appreciably from Rs. 29 crore on March 31, 1951 in five enterprises, to Rs. 30038 crore as on March 31, 1983 in 209 enterprises and at Rs. 35411 crore on March 31, 1984 in 214 enterprises. The number of public enterprises increased from 5 on March 31, 1951 to 217 on March 31, 1984. The investment increased by 17.9 per cent while the dividend declared increased by 15.6 per cent to Rs. 133 crore. The inventory level decreased from 100 days' output in 1982-83 to 97 days in 1983-84. Export earnings too increased by 14.1 per cent (Rs 671 crore) to Rs. 5,418 crore.

The basic indicators including sales, investments, exports, dividends had all gone up and there was an overall improvement in the performance of public enterprises. Though there was decline in net profit, the operational results showed an improvement.

Financial performance

The survey, which analyses the results of 201 units, eight more than the previous year, 1982-83, states that the financial performance of public units in 1983-84 ranks as the "third best" achieved so far falling short of the previous best two years of 1982-83 and 1981-82, in spite of increased burden on account of wage revisions and increased depreciation provisions.

The salary and allowances increased by 21 per cent from Rs 3 508.10 crore to Rs. 4,250 13 crore while the depreciation went up by 27.69 per cent from Rs. 1,653.41 crore to Rs 2111.48 crore. The change in the rate of depreciation took up Rs. 190 crore and wage revision to about Rs. 350 crore.

Fall in profits

The net profit showed a steep decline from Rs 613.51 crore in 1982-83 to Rs. 245.67 crore in 1983-84 although the gross profit rose by Rs. 104 crore to Rs. 3,569 crore.

The profit before tax also declined by Rs. 57 44 crore. The profit before tax declined due to higher interest charges during 1983-84 and the net profit dropped because of increased provision for income tax. Against an amount of Rs. 1922.74 crore in 1982-83, the provision for interest in 1983-84 worked out to Rs. 2084.65 crore—an increase of Rs. 161.91 crore. The income-tax provision showed a hike of Rs 310.40 crore from 928.49 crore to Rs 1238.39 crore.

The public sector ratio of gross profit of capital employed also showed a marginal decline of 1.12 per cent at 11.94 per cent from 13.6 per cent. This was a significant level and was achieved despite sudden jump in costs on account of depreciation and wage revision.

Turnover

In terms of gross turnover, the top ten enterprises accounted for 70 per cent of the total turnover of

201 enterprises during the year. Indian Oil Corporation retained its top position with an increase of 21.75 per cent at Rs. 10286.57 crore. Food Corporation of India remained second at Rs 4870.46 crore with 10.30 percentage of total turnover Third position was maintained by Oil and Natural Gas Commission, at Rs. 3451.92 crore with 7.30 per cent, fourth place by Steel Authority of India at Rs. 3147.71 crore with 6.65 per cent, fifth position by Hindustan Petroleum Corporation at Rs. 2460.79 crore with 5.20 per cent, sixth by State Trading Corporation at Rs. 2215.03 crore with 4.68 per cent, seventh by Coal India Ltd. at Rs. 2169.03 crore with 4.59 per cent, eighth by Bharat Petroleum Corporation at Rs. 1871.06 crore with 3.96 per cent, ninth by Bharat Heavy Electricals at Rs. 1324.72 crore with 2.80 per cent and tenth by Minerals and Metals Trading Corporation of India at Rs. 1310.64 crore with 2.77 per cent. The total turnover of the top ten enterprises was Rs. 33107.93 crore with 70.00 per cent, and the gross turnover of 201 enterprises under report was Rs. 47294.32 crore at 100.00 per cent

In the case of enterprises rendering services, transport services, development of small industries, tourist services and section, 25 companies showed higher ratio of the capital employed.

Sales

During 1983-84, total sales amounted to Rs. 47,294 crore, gross profit Rs. 3,569 crore, value-added Rs 10,043 crore, contribution to central exchequer (by way of duties paid, bonus paid) Rs. 6,566 crore, export earnings Rs. 5,418 crore, with the inventory level coming down to an overall average of 97 days of production compared to 100 days of production in 1982-83.

Capacity utilisation

The capacity utilisation of the number of units having over 75 per cent decreased from 90 to 88 and the percentage in relation to total number of units showed a deterioration from 55 per cent to 51.2 per cent. Adding to deterioration was the number of units where capacity utilisation was between 50 and 75 per cent. These jumped to 49 from 43 and units less than 50 per cent utilisation rose from 31 to 35.

Profits

The Oil and Natural Gas Commission with its sister concerns, remained on top of the profit earners with 53.27 per cent of the total pre-tax profit made by the profit making enterprises.

On top profit earners were Bharat Heavy Electricals (Rs. 75.03 crore), Neyveli Lignite (Rs. 62.97 crore), Central Coal Fields (Rs. 60.48 crore), the State Trading Corporation (Rs. 59.83 crore), Air India (Rs. 57.39 crore), Rashtriya Chemicals and Fertilizers (Rs. 50.05 crore) and Indian Airlines (Rs 46.35 crore).

The total profit earned by these enterprises during 1983-84 was Rs. 3017.71 crore.

As against the increase of Rs. 493.43 crore in the pre-tax profit made by 110 profit making enterprises in 1983-84, the loss making enterprises increased their losses to the extent of 551.87 crore, from Rs. 981.28 crore to Rs. 1533.15 crore. The net decrease in pre-tax profit during 1982-83, therefore, worked out to be Rs. 57.44 crore.

Employment

The public sector enterprises, by the end of 1983-84, employed 20,69,000 persons, including 47,000 new employees during the year.

Sick Units

Of the 214 public sector enterprises, 44 companies were sick units nationalised by the Government. They thus formed about 20 per cent of the public sector. These 44 public sector enterprises incurred a loss of Rs. 205 crore during 1983-84, which is also around 20 per cent of the overall losses of Rs. 1,533.45 crore incurred by the public sector enterprises.

(Continued from page 11)

sumption. Unleashing a requirement of austerity in order to mobilise surpluses for a much higher rate of growth inherently interwoven with plans for overcoming scarcities, employment expansion, poverty elimination and general cultural development. Black economy is a feature of a non-egalitarian economy with consumerist values.

Six

Various electoral and political reforms in order to reduce the unequal advantage enjoyed by the rich vis-a-vis the poor in the political processes. Recognition of political parties in the Constitution may be carried further by giving them, on public account, physical facilities for holding meetings, printing posters and election manifesto, giving ample time on mass media, use of voting machines and mechanical counting along with prohibition of use of individual and Party resources for these purposes taken care of by the State. A logical extension of these reforms would be a proportional system of representation Accounts of the political parties must be statutorily audited and like companies or co-operatives, internal democratic functioning of the political parties should be ensured by law.

Seeven

Simplification of controls, regulations, one-window clearance, time-bound disposal of files and cases, cheap and quick justice, open access to files of non-security and non-sensitive issues for public scrutiny and conscientization training for politicians, public functionaries, etc. can reduce corruption and thereby curb black economy.

The measures suggested may be considered of a far-reaching variety. But it is hoped that boldness and scientific initiatives are to have their day *now* and before it is too late.



This novel source of renewable energy

Harnessing the volcanoes

P. Bhattacharyya

From the very beginning of his history man has looked at the volcanoes with trepidation. People living in their vicinity did not know when those might errupt bringing in its trail indescribable calamity in their life. It is only recently that scientists have started work for tapping the vast energy resources of volcanoes. The author here discusses some of the aspects of this novel source of renewable energy.

THE EXPLOITATION OF geothermal waters is not new. A number of countries including Italy, New Zealand and USSR have put the heat of geothermal waters in good uses. Hot water heats apartment buildings and industrial projects, makes growing flowers and vegetables in hot houses feasible and fills swimming pools in balneological spas. Engineers have already built geothermal power plants.

In majority of the countries, however, the geothermal waters have been used as these are available in Nature. But in the Soviet Union fundamental researches about exploitation of what is known as thermally anomalous zones for making it possible to exploit the geothermal heat on a commercial scale is going on.

Soviet scientists have been aware that every volcano has tremendous thermal energy potential but it is not always easily available for tapping. After considerable researches they came to the opinion that underground heat of the volcanic regions, quite abounding in the USSR, especially in Kamchatka can be tapped through a carrier agent, water. But creating such underground circulation systems pose a number of extremely difficult technical problems for the scientists and the engineers. There must be two groups of wells for such systems. Water is pumped under pressure into the injection wells. Passing through the permeable rocks, this water takes heat from them. And the operating wells return the heated water to the surface where its heat is used for steam generation. Steam is, in turn, supplied to turbines for the generation of electricity. Pilot and commercial power units will be created on the basis of such subterranean circulation systems.

At present three experimental installations are under construction—the Kayasula unit in the Stavropol Territory, the Tarumovka unit in the Daghestan Autonomous Republic and the Mukachevo unit in Transcarpathia. These areas have been chosen so that the operation of different types of systems can be checked in various mountainous-geological conditions. After sufficient experimental data are gathered at these small experimental installations (with a capacity of upto 10 megawatts), these will be replaced by large systems competitive with conventional power stations.

Practical experience

But Soviet scientists are not content with their future plans alone in this field. They have already done some practical work and gathered considerable experience about exploitation of geothermal water in the volcanic regions. Their practical experience shows not only the fundamentally new approaches and opportunities, but also the efficiency of geothermal sources of energy.

The Pauzhetka steam-hydrothermal power station built on the Kamchatka Peninsula as far back as 1967 provides a concrete example. The capacity of the station is rather low on a modern scale—only 11

megawatts. But the importance of its success lay not in the scale. First the station has proved its profitability, In technical and economic parametres it surpasses the efficiency of power stations having a comparable capacity and consuming fuel brought from other places.

Pauzhetka, the first geothermal power station of the country, has not only confirmed the practicability of the concept of putting the geothermal waters into efficient use, it has also become a proving ground for this new branch of power engineering. It has answered many questions put by hydrologists, civil and design engineers, and utilisation specialists.

Tapping Mutnovsky geothermal region

Experience in the use of the Pauzhetka plant has made it possible to tap the Mutnovsky geothermal region, situated in the mountain about 130 kilometres away from Petropavlovsk. Survey work in that region is being carried out by the Kamchatka hydrogeological expedition of the Sakhalingeologia Association.

"Our survey has corroborated the tentative conclusions drawn by geologists," said G. Asaulov, Director of the expedition. "This is a really big deposit. We have not yet established its full potential, but it is obvious even now that this powerful energy source will be able to run the turbines of future power plant practically forever. To back up its operation with the prospected reserves is just a question of time," he added.

The Mutnovsky project for tapping the underground heat with the help of geothermal water is feasible due to several reasons, above all geological factors and local climate. The explanation is quite simple. The surroundings of the volcano are a natural catchment basin with deep enclosed depressions, cup-shaped valleys and high plateaus. The bulk of the precipitation, which gets trapped in the basin filters down to a depth of four to five kilometres where the underground temperature of 150-200°C converts it into super heated steam. This is thus a steady source, which replenish the water stock. According to the scientists, there are two tonnes of water per square metre of surface area on the average in the Mutnovsky deposit. And the area is so large that it measured not in hectares but in square kilometres.

In last year summer the specialists began using in the area powerful drilling rigs designed for oil deposits. They not only reach deeper into rocks, but make wells, which can be used simultaneously as prospecting and operational facilities. Using new rigs, specialists have already drilled two deep wells. To more wells are under way. A special team has been formed to make a qualitative test of the wells. Feasibility report about the commercial resources of the Mutnovsky project will be submitted for endorsement by the end of 1986. Its design capacity is 200 megawatts.

Just the beginning

This is just the beginning of the development of the geothermal power industry on the Kamchatka peninsula. According to the geological and geothermal forecast, in the foreseeable future several stations can be built in Kamchatka with an overall capacity of upto 2,000 megawatts. But other zones of volcanism, Sakhalin and the Kuril islands, are also rich in commercial reserves of geothermal steam and a steam-water mix. Geothermal power stations can be built also there in future. The capacity of geothermal stations, which can be built in the Soviet Union on the basis of thermal zones is estimated to be about 150,000 megawatts. Approximately half of these capacities falls on the European territory of the USSR, specifically in its southern part—the Northern Caucasus, the Crimea, Armenia and Transcarpathia.

It may be mentioned in this connection that the large-scale use of solar, wind, biomass, geothermal and tidal energies will begin in the USSR in the nineties when necessary technologies will be developed and facilities built.

Need for harnessing by India

Therefore, in the background of close economic cooperation between India and the Soviet Union and in view of existence of volcanic zones in the north-eastern part of the country, especially in Assam, cooperation between the two countries in exploration of geothermal energy may be quite helpful for India

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Cost of deforestation Rs. 1000 million a year

DEFORESTATION IS COSTING the country one thousand million rupees every year by way of flood and other damages.

Forests, besides maintaining the woodbased industries, meet 60 per cent of the rural energy requirements Against this backdrop, the Prime Minister's programme of annual afforestation of five million hectares of barren, waste and denuded land could bring about a radical change. A massive funding of forestry programmes for the next ten to twenty years to contain deforestation effectively is, therefore, called for. In this connection, the Government of Indian's declaration of the Sunderbans as a national reserve area is hailed by the environmentalists. While conservation of the flora and fauna was imperative, it was essential to keep in mind the needs of forest dwellers as well □

BOOKS

Agrarian Power Structure

Agrarian Power and Agricultural Productivity in South Asia, Edited by Meghnad Desai, Susanne Hoeber Rudolph and Ashok Rudra, Delhi Oxford University Press, Bombay, Calcutta, Madras, 1984, pp. 384 Price Rs. 160.00

THE BOOK UNDER REVIEW is the outcome of 'several exploratory meetings convoked by the Joint Committee on South Asia of the Social Science Research Council.' The interdisciplinary and international group of social scientists addressed the question: 'Given the state of social sciences in 1970s, how can and should problems of South Asian political economy be explored'?

The working group comprised Sukhmoy Chakravarty, B. B. Chaudhuri, and Ashok Rudra (teaching in India), Meghnad Desai and Hamza Alavi (teaching in England), Ronald Herring, David Ludden, Susanne, lloyd Rudolph, and T. N. Srinivasan (teaching in USA) and Donald Attwood (teaching in Canada) All of them excepting Srinivasan and Hamza Alavi have contributed to the volume, which deals with Capital and the Transformation of Agrarian Class Systems : Sugar Prouction in India (Donald W. Attwood), Productive Power in Agriculture : A Survey of work on the Local History of British India (David Ludden), Rural Power Structure and Agricultural productivity in Eastern India 1757-1947 (B. B. Chaudhuri), Power and Agrarian Relations : Some Concepts and Measurements (Meghanad Desai). Economic Consequences of Local Power Configurations in Rural South Asia (Ronald J. Herring), Local Power and Farm-Level Decision Making (Ashok Rudra), Determinants and Varieties of Agrarian Mobilisation (Lloyd J. Rudolph and Susanne Hoeber Rudolph), and Power Structure and Agricultural Productivity (Sukhmoy Chkravarty).

Susanne Hoeber Rudolph who provides Introduction to the volume aptly remarks : "The central problematic for this volume was how local power structures impinge upon levels of and changes in agricultural production or productivity." (p. 12), and that "throughout, we have sought to guide our enterprise toward a political economy that is more comprehensive and sensitive to culture and history." (p. 18). The volume rightly concerns itself with linkages 'required to integrate the value and relevance of aggregate and specific formulations.'

The work is a welcome addition to the existing literature on the theme and would prove to be of immense value to the students and researchers. The price particularly for the readers in this part of the world, is a little high.

S.M. Waseem

Rural Economy

Rural Economics By A. R. Patel and D. P. Khankhoje, Published by Sultan Chand and Sons, 4792/23, Daryaganj, New Delhi 110002. First published : 1985 Pages 536. Price Rs. 38.00

A STUDY of India's rural economy gives enough insight into the various parameters that go to make a viable culture for economic development. Unfortunately, somehow this study has not been taken seriously by students of economics in the years gone by as it was thought there was not much to know about it. But as time passed, the rural development scenario unfolded itself as one where one finds the starting point for all economic progress Besides, in recent decades a significant emphasis has been placed on rural development and for this purpose a number of schemes in various areas of activities were taken up. In the process, their evaluation, monitoring and further consolidation meant that every time rural projects were to have a quantum jump for ameliorating the lot of the overwhelming majority of our population

In this context, naturally adequate literature also saw the light of the day. Many universities introduced a separate subject of rural economics for undergraduate and post-graduate degrees. Some professional courses also did the same. To meet the growing demand for initiation to the study of rural economy, a plethora of books have now come up The present book is one of them.

While the authors' canvas is not wide enough, they have surely dealt with the themes of agriculture, allied activities, rural credit and development elaborately with sufficient facts and figures. In fact, in a subject like this it is difficult to get quite up-to-date data and as such, if some of them relate to some distant past, the fault is not that of the authors.

But one is surprised to see that the book written in March, 1985 does not contain a word about the Seventh Plan when so much discussion has taken place in the country on the Approach Paper and rural development in the new plan period. The readers surely miss this badly in the book. Likewise, the various tables given in the book do not indicate the source of information and this is a serious defect, particularly because we get so many data at great variance in several publications. As such, it becomes difficult for the reader to guess which is right and which is wrong. There is also absolutely no mention of any book written by others on the subject.

In other words, bibliography is conspicuous by its absence. A lot of literature has come up in recent years in the country and the readers should be informed for their benefit. The authors do not claim any originality or analytical approach as they observe in the preface that the target readership pertains to candidates preparing for certain diploma and similar examinations. In that case, perhaps one may not have much to comment on the content as well. ☐

Navin Chandra Joshi

Indian shipping glides on to modernisation

INDIAN SHIPPING has come a long way since Independence. From just 50 ships aggregating 1.9 lakh gross registered tonnage in 1947, we now have 433 ships with a total tonnage of 6.37 million GRT. This is largely the result of the incessant efforts made by the Government and the shipping industry to develop and modernise shipping in India.

India has a vast coastline of 5,345 kilometres studded with numerous ports. The facilities at these ports are being constantly upgraded and over the Sixth Plan period the port capacity has registered an increase of 35 million tonnes which is an increase of about 35 per cent. An intensive programme for the development and modernisation of ports has been drawn up. A sum of Rs. 1,500 crore for covering these schemes and projects during the Seventh Plan period has been proposed.

In the context of fast developing container traffic, the ports of Bombay and Cochin on the West Coast and Madras and Haldia on the East Coast are being developed for container handling. A fully mechanised container terminal capable of handling third generation vessels has become operational at Madras Port. As a result of these measures, the ports now have a capacity to handle about three lakh containers. Indian flag-ships account for just over 40 per cent of the country's sea-borne trade.

Against a target of 7.5 million gross registered tonnage (operative) target set out for the Sixth Plan, the achievement till December, 1984 was 6.37 million gross registered tonnage. Of this 0.35 million GRT comprised 96 ships covering dry cargo, oil tankers, passenger-cum-cargo and off-shore supply vessels, and 6.02 million GRT covering 337 ships for overseas trade. In all, 433 ships were involved. ☐

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Protected couples on the rise

TDP COUPLE PROTECTION level in India has now reached 32 per cent, an all time high. This phenomenal increase witnessed during the Sixth Plan gives the hope to enlarge the target for the Seventh Five Year Plan,

It was a matter of great satisfaction that the couple protection rate which had fallen from 23.7 per cent during 1976-77 to 22.3 per cent in 1979-80 crossed to 29.3 per cent by 1983-84 and now reached 32 per cent.

In terms of the future strategy, the target set for the Seventh Plan period was high, namely, crude birth rate of 27, death rate of 10 and infant mortality rate of 87 per thousand. The couple protection level has to reach 42 per cent by the end of the Seventh Plan from the present level of 32 per cent if the country has to achieve the goal of reaching 60 per cent couple protection level by 2000 A.D. The universal immunization of expectant mothers would have also to be achieved during this period since the mother and child health programme formed integral part of the family welfare programme. In this regard the importance of the survival rate of the children born is stressed. Unless the health and the survival of child born was guaranteed the poor people for whom this family welfare programme was meant would not go in for the small family norm.

The targets of family planning set forth for the Seventh Five Year Plan are : 31 million sterilisations, 21.25 million IUD insertions, 625 million of conventional contraceptive and oral pill users. To achieve this Rs. 4,000 crores have been allocated for the Seventh Five Year Plan. The achievements during the Sixth Plan are of the order of 17.8 million sterilisation and 5.7 million IUD insertions at the expenditure of Rs. 1,400 crores.

As for the community participation, the thrust of the programme was on the voluntary aspect of the programme. The Government alone could not achieve the set targets with best of intentions and higher financial allocations. In this regard, a large net work of sub-centres, primary health centres and rural dispensaries have been established throughout the country to implement the programmes for community participation. □

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Towards a poisonous future !

NEXT ISSUE

More on 'Testing voluntary agencies'

India to be surplus in aluminium by 1988-89

THE COUNTRY is expectea to be surplus in aluminium by 1988-89. The Seventh Plan working group on non-ferrous metals has projected the lemand for aluminium at 4,36,000 tonnes as against the likely production of 4,81,000 tonnes in 1988-89. The demand and production in the terminal year of 1989-90 will be 4,75,000 tonnes and 4,99,000 tonnes respectively.

The working group has forecast an annual growth of 9 per cent in the production of primary aluminium during 1984-85 to 1989-90 and 8.5 per cent during 1989-90 to 1994-95 and 7.5 per cent during 1994-95 to 1999-2000 A.D

However, the gap between demand and supply will have to be bridged by import of the metal until 1987-88. With the commissioning of National Aluminium Company in that year, the situation is likely to take a favourable turn. The anticipated production of aluminium during the year 1984-85 was 2,60,000 tonnes as against 2,20,280 tonnes in 1983-84.

One of the highlights in the field of aluminium industry during 1984-85 was the progressive relaxation of distribution control due to easy availability of the metal. The aluminium producers have now been allowed to supply extra EC grade metal to eligible actual users who are in the list of allottees of the Controller of Aluminium. However, a close monitoring of distribution of imported aluminium was carried out by a joint panel comprising the representatives of the Department of Mines and MMTC.

A development council for aluminium was set up which, in its first meeting held recently, recommended greater use of aluminium in the existing areas as well as new applications. It felt that this could be worked out through a suitable rationalisation of the cost structure of the industry. ❑

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Ganga, the most polluted today !

Subhash J. Rele

Lamenting that the Ganga is today the most polluted river in the world, the author welcomes the setting up of the Central Ganga Authority to stop further pollution of the river. He calls for steps to minimise the throwing of industrial wastes into the river; treat garbage and sewage; start environmental study as part of the school curriculum; and educate people through mass media about the need to stop pollution of the river.

"GANGA HAS BEEN a symbol of India's age-old culture and civilisation, ever-changing, ever-flowing, yet the same Ganga", rhapsodised Pandit Nehru in his Will and Testament Today, unfortunately, Ganga is the most polluted river in the world. While replying to a question, late Mrs. Indira Gandhi said in the Lok Sabha on March 19, 1984, that "stretches of Ganga immediately downstream of Kannauj, Kanpur, Allahabad, Varanasi, Patna and Calcutta are polluted and the water in these stretches is unfit for human consumption. In terms of biochemicals oxygen demand, only the river Sabarmati downstream of Ahmedabad is more polluted than the Ganga."

According to the latest studies by the State Water Pollution Control Board, a wide stretch of the Ganga from Uluberia in Howrah district to Diamond Harbour and beyond in the 24 Paraganas has become so polluted over the past few years that people on both banks of the river find its water unfit even for irrigation purposes, let alone for drinking. But the more dangerous fact is that pollution of the Ganga is not confined to its stretches in West Bengal alone The river is getting increasingly polluted in the highly congested areas of Uttar Pradesh, especially Kanpur and Allahabad. Recent reports say that bacterial content of the river at Allahabad stands at 300 per ml and the entire stretch of 50 km of the river below Kanpur had become extremely polluted.

An extensive monitoring of river water by the Central Water Pollution Control Board revealed that out of the 2033 kms of water, 480 kms is polluted to varying degrees. According to a group of scientists, who recently undertook ecological studies of the river water, it contained germs of cholera, typhoid and gastro-enteritis. After every kilometre of its stretch in Uttar Pradesh, Bihar and West Bengal, garbage, sewage and industrial waste is being poured into the river.

Lack of sewage treatment

None of the large cities on the banks of the Ganga has a sewage treatment plant although most of them have partial sewerage facilities. In all, 48 class I cities and 66 class II towns dump largely untreated sewage into the river every day Most of the factories which discharge effluents into the river have no means of cleansing the waste. To this is added the burden of other human activities like bathing, washing of clothes and immersion of ashes, or unburnt corpses. Industries contribute chemical effluents to the Ganga's pollution load. Pesticide factories, tanneries, paper and pulp mills, petrochemical and fertiliser complexes, rubber factories and a host of other industries use the river to get rid of their wastes.

An analysis of the Ganga sediments in Varanasi has revealed the presence of toxic metals like cadmium, chromium, copper, mercury, lead , nickel, arsenic, antimony and zinc. According to a survey report paper published in the Indian Journal of Health, the river could not be considered safe for human use. A warning to this effect was given some months ago be-

cause people drink the untreated Ganga water for religious reasons. A team of environmentalists has recently reported that Ganga is unfit for bathing in the Banaras region and that some people using its waters are afflicted with skin diseases. This situation is due to the large quantity of sewerage emptied into the river near the pilgrim city on top of contamination arising from the burning of dead bodies near Manikarnika Ghat.

Controlling the pollution

Alarmed by the increasing pollution of the river Ganga, the Central as well as the various state governments have now decided to take measures to control pollution of the Ganga. In this context, the recent decision of the Government to establish a Central Ganga Authority to stop pollution of the holy river is most welcomed. One of the pollution control measures initiated by the Central Government in cooperation with State Governments some months back includes stopping the practice of throwing dead bodies into the river. This was the first serious step. The question arises as to why it has not been implemented so far. Through this contamination of the river, man is inflicting a serious punishment on unborn generations.

Alarming water-borne diseases

According to a survey by the Health Department of U.P., drinking water in as many as eleven important cities is highly contaminated and unfit for human consumption. A staggering 70 per cent of the available water in India is polluted, according to scientists at the National Environmental Engineering and Research Institute. From the Dal Lake in the North to the Periyar and Chaliyar rivers in the South, from the Damodar and Hooghly in the East to the Thana creek in the West, the picture of water pollution is uniformly gloomy. Water samples were found to contain dissolved impurities, and an absence of oxygen which had completely destroyed water's ecological balance making it as dangerous as slow poison. The 50 to 75 per cent of the population in Kanpur, Lucknow, Varanasi, Allahabad, Ballia, Agra, Jaunpur, Gorakhpur, Basti, Sitapur and Etawah suffer from one or the other kind of stomach ailments. The analysis found that most of these were water-borne diseases like cholera, enteric fever, gastro enteritis, amoebiasis, guinea worm diseases. It is estimated that 73 million work days are lost every year due to water-related diseases. The cost of treating them and the loss in production amount to Rs. 600 crores a year.

Deaths from diseases spread by polluted water are common place all over the world. Each country follows its own method of controlling pollution. In many countries this form of pollution was remedied by improving sanitary conditions and water treatment. Industrial effluents are discharged into sewers constructed by local authority. Simple technology is required to solve the problem. Often the engineers fail to apply biological treatment techniques which have been well-known for forty years. The greatest need, some feel, is for a more efficient administration and for a system of financial incentives and control to ensure that the best available technology is used.

What laws can do!

In many countries, the people have forced their governments to pass laws like the Clean Air Act or Water Pollution Act. The people in industrially-advanced countries have challenged policies of industries without adequate safeguards. In the USA, there is federal legislation which invites the people to participate in the decision-making process or anything that affects the environment, alter their socio-economic pattern or jeopardise their lives.

True, in India we do have State (Prevention and Control of Water Pollution) Boards but they are most ineffective. They have hardly anything to show by way of achievement and their activities are confined to paper work and maintaining an office and establishment. Large-scale pollution of rivers is turning them into sceptic brains posing a serious health hazard to millions of people. The State Boards, for some obscure reasons, are reluctant to take action against erring industries releasing untreated chemical pollutants into the rivers. The utmost that the Boards have so far done is to issue notices to units for installation of water treatment plants, which is in any case a statutory obligation on the industries. But since the authorities themselves are not so serious about controlling water pollution in particular, the industries care two hoots for these warnings and notices. Our industries can, if they do desire, develop improved methods of manufacture that would have the dual effects of using profitable products now wasted and also minimising the number of pollutants released into the river.

Sewage disposal, a big problem!

City sewage is a potential threat to our water resources. Only a half of the collected sewage is treated; the rest is discharged in rivers. Each state can and should try to develop efficient means of purifying its water supply. It must modernise its existing facilities. In most States hundreds of factories on both banks of our rivers continuously pump out industrial wastes and in most cases the managements concerned do not bother to treat the such wastes.

Commenting on the new Government's move to set up a *Central Ganga Authority, Dr. Rashmi Mayur*, the noted environmental scientist points out that since the problem of pollution in India is all pervasive, the Authority conceived by the Government will not prove equal to the task. What we need is a sound Environmental Ministry within which we can have a division dealing with pollution of rivers. After all, the survival of India depends upon all the rivers! According to

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And how to clean the Ganga

Dr. Nilay Chaudhuri

Talking about the action plan to clean the Ganga formulated at the instance of the late Prime Minister, Mrs. Indira Gandhi, the author says the river is receiving polluted water of domestic sewage and industrial effluents of exactly 100 towns including 27 class-I cities located on its banks. He points out that 84 per cent pollution of the river could be controlled if these big cities are prevented from polluting it. It is, therefore, logical to strike at these 27 locations rather than at all the 100 points. The author feels resources recycling could be one of the methods to achieve this objective. How it can be done, he explains the process.

"Can we not clean the Ganga ?" The late Prime Minister, Mrs. Indira Gandhi, asked me over a year ago. The question was brief and bold but the reply was even more brief and shaky. I said "yes, but......". She promptly said, "......then go ahead and prepare an action plan, if need be, propose an Authority to implement the action plan."

Having got so much of a support even before asking for it one cannot look back. I also did not look back. By then, the Central Pollution Control Board with the able support of the seven relevant State Pollution Control Boards (Haryana, Himachal Pradesh, Rajasthan, Madhya Pradesh, Uttar Prdesh, Bihar and West Bengal) prepared two comprehensive reports entitled "Basin Sub-Basin Inventory of Water Pollution—Part I—The Yamuna Basin" Part II—The Gang Basin." It had taken the Boards 5 long years to collec collate and compile the factual information that we available and to generate further information that we not available such as pollution potential data, riv water quality data, river water use data. The Centr Pollution Control Board had to engage specialise agency for final compilation of the report and fo the cartographic presentation of seven maps.

How it was formulated!

With such a vast wealth of information availabl at the disposal of Central Pollution Control Board an the assured support of Mrs. Indira Gandhi, framin an action plan for the clearing of the Ganga becam an easy task. By the month of May she wrote to a the seven states about the two reports of the Centra Pollution Control Board and asked the opinion o the Chief Ministers of the Seven States about thei reactions towards taking up a joint action plan over whelming. By September, 1984, we, in the Centra Pollution Control Board, were ready with the firs five-year programme of Ganga Action Plan. We com pleted preparation of the plan within a record perio of 4 months with the objective of placing the actio plan along with the Seventh 5-Year Plan of the coun try. The report entitled "Ganga Action Plan—th First Five Year", got printed in October, 1984 bu could not be formally presented to the Nation by Mrs Gandhi. She left it behind for the new Prime Minister His inclusion of Ganga Action Plan in his inaugura address to the Nation after assuming the charge o Prime Minister is the most glowing tribute to the departed noble soul who always stood for the caus of cleaner and better environment.

What the Plan seeks?

The Ganga Action Plan in its first five-year programme intends to clean the main river course of the Ganga Where to clean the river ? Obviously at loca

tions where dirty water or polluted water are getting discharged into the river Ganga. There are exactly 100 towns located on the Ganga (26 in U.P., 15 in Bihar, 59 in West Bengal). In these 100 locations the Ganga is receiving the polluted waters of domestic sewage and industrial effluent. The Ganga Action Plan in its first five years intends to control the pollution caused by the large sized cities. There are 27 such cities, known as Class-I cities, on the Ganga river banks. Class-I cities are those where population as per 1981 Census has crossed 1 lac. If these 27 cities are prevented to pollute the river Ganga, 84 per cent of total pollution coming directly into the river will be controlled. If by controlling pollution from 27 cities out of 100 cities, 84 per cent of pollution can be controlled then it is logical to strike at those 27 locations rather than striking at 100 locations.

How the pollution at these 27 locations are planned to be controlled in the Ganga Action Plan. It would be worthwhile to look into the scene of pollution in the major cities. Only 10 out of 27 cities have sewerage systems covering a fraction of total population. In Patna of Bihar and South Dum Dum of West Bengal, 25 per cent of population are covered by sewerage systems. In both the locations the city sewage is meeting the river Ganga at more than 5 locations and thus causing pollution. What is needed is diversion of this sewage using sewer lines parallel to the river bank and take the sewage to appropriate location for further treatment. The immediate task is to create the diversion of sewage followed by creation of treatment facilities at the locations where the sewage is diverted. As cost of diversion of sewage through pipeline increases as the distance of travel increases, it is, therefore, conceived that the length of diversion should be kept at a minimum. It is for this reason, there may be more than one locations where the sewage from a city may be diverted. Large cities like Kanpur, Allahabad, Varanasi in UP, Patna in Bihar and Bhatpara, South Dum Dum, Jadavpur and South Subarban in West Bengal should require more than one locations where sewage would be diverted. The Ganga Action Plan has conceived of 54 locations where sewage would be diverted.

How does it function ?

In all these 54 locations you imagine the creation of a factory called Resource Recycling incorporated. In each of the Resource Recycling Unit, raw sewage is considered as the raw material and various products are produced for marketing. In the factory shed of Resource Recycling Unit following industrial processes are proposed to be built. Raw sewage is led to a settling process where solids are separated from liquid. The solids go to digester to produce methane gas and digested solid. The methane gas is fed to gas turbine to generate electrical power for running the factory as well as to sell the surplus energy to other consumers. The digested solid is sold as manure. The liquid from settline process goes to biological aerator where more solids or water from the biological aerator is clean enough to be used for aquaculture where algae and fishes are grown. Algae is harvested as poultry feed and fishes are marketed. The water from aquaculture flows out as irrigation water. Thus, each resource recycling unit produces energy, manure, poultry feed, fish and irrigant. Hence efficient marketing of these products are also conceived as an integral part of Resource Recycling Unit.

A Profitable proposition

How to implement such a scheme. A scheme is proven to be laudable if only it is implemented well and subsequently run well. Hence both the initiator of the scheme and people at large are waiting anxiously to see how the scheme is implemented. Conceptually each of the scheme at the 54 locations would be replica of each other with certain variations catering to the needs of the location. Basically each of the unit will be fed with sewage as raw material and each unit would remain responsible for producing the 5 products like energy, manure, poultry feed, fish and irrigant. The manufacturing process should remain unaltered This saves design expanses and also reduces the construction cost of each resource recycling unit. What role States can play ?

What role States can play ?

There is hardly any scope to further review the *inter se* priorities between the 27 cities. The Ganga Action Plan has already given a good deal of thought in sorting out the *inter se* priorities. The components of each scheme is well known. What is needed is detailed estimate oriented to suit the location. For this function the various contracting agencies that are in existence both in the Central and State sector in the Government and outside the Government may compete as a bidder for constructing the different components of Resource Recycling Units. The State level Steering Committee along with the Steering Committee at the Government of India level will scrutinise the clearance. Obviously, a State Pollution Control Board play a dominant role in assisting the Steering Committees. The role of State Pollution Control Boards needs no elaboration, as these are the only organisations in the country who have a stake in pollution control. Once the facilities are built, it is important to run these facilities in a profitable manner. It may not be too inappropriate to say that India lacks in maintaining systems. Most of our industries produce goods at a capacity much below the rated capacities. While a long list of excuses are available to justify such under-production, none includes improper maintenance as one of the excuses lest it should reflect on the management itself. In these Resource Recycling Units which deal in dirty water maintenance may turn out to be the weakest link of the entire systems. It is therefore, important to give a serious thought to the management of the Resource Recycling Units.

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Towards a poisonous future !

S. S. Yazdani & B. Singh

The air we breathe, the water we drink and the food we eat are all polluted by pesticides. The contaminated environment endangers human and animal life. Soil, water, air and food contain residues of pesticides. If we continue to rely upon broad spectrum of insecticides, the recovery of natural forms of control will become almost impossible. The authors here caution against constant violation of natural habitats and say, "We need to think, plan and act ecologically". If this can be done, operating agencies should be able to anticipate most of the consequences of the land resource use technologies, mostly responsible for environmental pollution.

WITH THE ADVANCEMENT of human civilisation, there was an increase in demands of food stuffs which consequently led to the manipulation of land resouurces, causing a stress in the natural environment The need for increased production as a result of population explosion was emphasized since long. Consequently, protection technology was developed to save the crops during their growth periods and the grains during storage. The production and protection technologies are, however, so interwoven and interdependent that it is impossible to visualise a shoot up in crop production individually.

In recent years, losses due to crop pests particularly on high yielding cultivars have been very high. Working out the average of several trials, scattered all over India on paddy alone, it appeared that there was 108 per cent increase in the yield of IR-8 and 194 per cent in 'TN-I, varieties, when grown under plan protection umbrella Similar examples may be cited for other crops also.

How pesticides endanger human life

The control of crop pests receives great impetus in early forties due to the credited discovery or the insecticidal properties of DDT by Paul Muller in 1939. This insecticide came to the rescue of practically majority of the crop pests all over the world upto early sixties and enabled the breeders and agronomists to realise the potentialities of high yielding crop varieties. subsequently, the English and French workers discovered the pesticidal value of another equally good chemical known as benzene hexachloride (BHC). A large number of pesticides since then 'flooded' the market, claiming effective control of problematic insects. Spectacular successes were achieved initially but their injudicious and indiscriminate use led to serious problems challenging the very existence of human society.

Pesticides are considered as a potent source of environmental hazard, especially when their degradation products remain active in the environment after the desired purpose is over. Persistence and movement of pesticides in food chain are the most significant factors responsible for causing pollution in the environment, though sometimes biodegradation of toxic materials is accelerated by specific microorganisms in soil, inherent suitability of the compound for degradation.

Its capability to induce the formation of appropriate exzyme system in the detoxication, and con-

tact between chemicals and organisms, etc. are other factors responsible for persistence in the environment. The pollution of environment due to pesticides normally takes place through soil, water, air and food. The main cause may be attributed to: (i) industrial waste from pesticide factories, (ii) residues in agricultural and horticultural products and waste, (iii) run-off from sprayed fields, (iv) air drift of chemicals, (v) accidental spillage, and (vi) evaporation from soils and plants.

What, we eat pesticides !

Surveys of pesticides residue of market samples of different food stuffs in India showed that DDT contamination was around 91.7 per cent. According to a recent report,[1] the use of pesticides on crops and vegetables appears to be excessive, uncontrolled and without consideration for the health of consumers. Vegetable growers spray pesticides indiscriminately not only during the growth of vegetables but also at the picking time of fruits. Spraying of vegetables at the time of picking is done with a false notion that it gives a fresh look Almost all the samples of edible grains analysed so far showed pesticidal contamination to a great extent.

Samples of wheat, maize, and bajra contained high levels of DDT besides other insecticides. Report on the residue analysis of milk samples revealed that out of 17 samples analysed, 13 contained DDT at levels ranging from 0.02 ppm to 0.75 ppm. Eggs in contrast to milk and butter are found to contain low levels of DDT. According to one estimate, an average daily Indian diet contains about 0.72 mg of DDT. Levels of DDT in human fat samples from Delhi appear to be the highest of the surveys done so far in the world. It is interesting to note that civilians in Delhi area with relatively no occupational exposure to DDT had higher levels of DDT in their fat than their counter parts in U. S. A.

Pesticides contaminate soil !

Contamination of soil with pesticides is very common. A high proportion of pesticides in India is used on standing crops. Soil contamination can, however, become serious with persistant pesticides especially when they are used for a number of years. Residues of pesticides may have adverse effect on soil micro-organisms and could perhaps affect the soil fertility as well. Moreover, the crops which are grown in contaminated soil may also contain residues of pesticides and thus, become unfit for human and animal consumption.

Even water not untouched !

Pesticides are carried into the water in various ways. They may contaminate both surface and ground water. Contamination of water occurs as a result of aerial spraying on cultivated areas, movement of pesticides from soil water, movement in drainage, surface run-off, blowing of surface dust by effluents of pesticides manufacturing plants.

About 34,000 tonnes of pesticides and insecticides are used in agriculture and 1,10,000 tonnes of synthetic detergents are consumed for washing and cleaning purposes in India every year. As much as 25 of these chemicals can be expected to find their way into coastal marine environment. The region just off Bombay and near Bombay High is the most polluted area.

The purity of water for urban supply is maintained only by chlorination. The action of chlorination is purely compound which breaks into hydrochloric acid and free oxygen. Acid combines with the alkalies present in the water and becomes harmless, while the liberated nascent oxygen being extremely potent destroyer of living organisms gives rise to the production of mutent type of viruses.

Only a few years back, a disease termed "Handigodu" after the most affected village was observed in the rural areas of Chikmangalur and Shimoga in Karnataka. This disease was found to be caused by pesticides application in paddy and coffee fields. The diagnostic characters of the disease were pain in the hip and knee joints, abnormal growth of several bones and in some cases caused changes in femoral head. It is interesting to note that only persons who took fish, frogs, and crabs from the polluted tanks and rivers were found to be the sufferers of the disease.

Air too !

Introduction of pesticides into air may occur through spraying operations, volatilization of chemicals from soil or plants or burning of plant materials containing pesticide residues. The large quantity of DDT in the human fat is attributed to the practice of spraying in inside homes in India.

Damaging natural controlling agents !

One important aspect of the biological capital on which agricultural productively depends is the net work of ecological relationships that relate insect pests to the plants on which they feed and to other insects and birds that in turn prey on the pests. This natural relationship serves to keep pest populations in check. Pests which require a particular plant as food are kept in check by other insects which parasitize and prey upon them and exert important biological control over the pest population.

While attempting the control of pests of cereals, cash and vegetable crops these natural relationship seems to have been broken allowing the natural relationship machinery to get out of hand. Massive use of the new insecticides kill some of the major pests, but disturbed the natural balance. Insects predators and parasites are often more sensitive to the insecticides than the pest. Thus, insecticide induced out break of pests is becoming problem on several crops. If we continued to rely upon broad spectrum of insecticides, the recovery of natural forms of control will become almost impossible.

This growing soil erosion !

Although exact statistics is not available, it is estimated that 90 million hectares of land are affected with soil erosion problems. The amount of soil displaced by water erosion is of the order of 60,000 million tonnes/year. The genesis of erosion lies in the destruction of natural vegetation cover of the soil by over-felling and over-grazing Erosion by water constitutes the most serious menance to the land resources of the country not only because it denudes the soil directly but also because it leads to siltation of reservoir and tanks.

The problem becomes serious particularly when the muddy water flows in the river systems during rainy season. In the arid and semi-arid tract where rainfall is low and erratic, considerable amount of finer material from the soil is uplifted with high volocity winds prevalent in the area during the premonsoon season. This is causing pollution of air and atmosphere.

Soil fertility dwindling !

The extensive pollution of water supplies by nitrates in the run-off from agricultural land heavily treated with artificial fertilizers can add a further mutagenic hazard. This is because certain bacteria in sewage can convert nitrates into nitrites and the latter act as virus mutagens under certain condition.

Nitrates in drinking water are a chemical hazard in their own right. Certain bacteria in the intestinal canal can convert them into nitrites, which after reaching the blood destroy the oxygen carrying capacity or the haemoglobin in red blood corpuscles. Infants whose foods happen to be made up with such water have been found to suffer very badly and even dies of asphyxia.

Products of the chemical industry and their effluents do not restore soil fertility, they rather erode it and while in the short run increasing production albeit by diminishing increments. Chemical fertilizers may also affect the growth and development of plants and make them more susceptible to pest attack.

Even irrigation causes pollution !

Increase in the irrigational facilities has also given rise to such problems as water logging and soil salinity. Movement of nutrients becomes much faster in irrigated areas and possibility of nutrient pollution increases.

Now and then we read about some calamitous loss of life and property in some parts of our country due to flash floods causing a dam to burst. Enormous sums are spent annually in the operation and maintenance of dams, reservoirs, lakes and channels. Water sheds deprived of their natural cover of vegetation are chiefly responsible for the site that is fed into main rivers from their feeding tributaries.

Crops losing natural resistance !

Maize crop achieved its greatest selective development over a period of some 300 years. It is believed that maize has been developed from wild teosinite. The continued presence of teosinite in Mexican maize fields is now credited with the supply of mixed genetic characters that have given the modern maize plant a renewal of valuable genetic qualities. Now, it is unfortunate that teosinite is disappearing at an accelerating rate.

When plant-breeders artificially protect plants from pests through the use of pesticides or various other means, natural resistance in plants may be lost unintentionally during breeding and selection. Since crop plants which are not physiologically stressed are generally more efficient in resisting insect pests attack and any chemical that alters normal physiology is likely to increase the susceptibility of crop plants.

Follow a wiser course !

The land resource use technologies which are responsible for the environmental problems cited above have in fact achieved increased food production. Whether it is the intensive use of inorganic nitrogenous fertilizer or evolution of high yielding varieties or the control of harmful pests and diseases, most of these factors with sound economics are connected with the technological advancement but these lead to environmental deterioration at the same time. Unless we correct some of these present trends and follow a wiser course, nature's stern hand of redistribution is sure to strike We live in a world of law and order and cause and effect We will ultimately have to pay the price of our constant violation of nature's inexorable laws unless we soon correct our mistakes and follow a wiser course We need to think, plan and act ecologically If this can be done. operating agencies should be able to anticipate most of the ramifications and consequence following the land resource use technologies.

(Continued from page 5)

him the main difficulty—apart from the massive funds needed for cleansing the rivers—is that of changing social and religious institutions. This is a gigantic task. Instead of burning dead bodies we must have electric cremation.

Need to create awareness !

People must be educated to understand the need for wise and restrained use of the Earth's resources, water being the most vital. It is good that the new Government is overhauling our educational system. Education for environment is the need of the hour. It is high time both the Central and State Governments should start educating the people through TV, films, documentaries and other mass media about the need to stop the pollution of the Ganga and other rivers. Why not start environmental studies in our schools curricula ? Given an enlightened attitude and social and political cooperation, our river waters can be managed well

Sharing a common future!

Gro Harlem Brundtland

Mrs. Brundtland is Chairman of the U.N. World Commission on Environment and Development. This article is an abridged version of her speech at the inaugural meeting of the Commission held at Geneva in October 1984. She outlines the tasks facing the Commission as well as all nations and peoples. She emphasises the need for political forethought and prior action rather than reaction. She says we must learn to think globally and in a long-term perspective and dig deep into our political consciousness and make movement and sustainable development a "pre-fit" not a "retro-fit".

IF I WERE to put the objectives of the Commission into three short points I would say they were ·

First, to re-examine the critical issues of environment and development and to formulate innovative, concrete and realistic action-proposals to deal with them;

Second, to assess and propose new forms of international co-operation on environment and development that can break out of existing patterns and influence policies and events in the direction of needed changes; and

Third, to raise the level of understanding and commitment to action on the part of individuals, voluntary organizations., businesses, institutes and governments.

Pressures on environment and development

The commission has been established at a time of unprecedented pressures on the global environment and a growing recognition that much of today's development is not sustainable. Rather it is based upon a squandering of our "biological" capital : our soils, forests, animal and plant species, even our water and air. It consumes its own ecological foundations.

Many of today's economic, monetary and trade policies and policies in sectors such as energy, agriculture, forestry and human settlements, induce and re-inforce non-sustainable development patterns and practices. Many current approaches to environment and development are not working. Widespread poverty and concentrated affluence conspire to increase environmental degradation, to increase pressures on resources and to increase inequities that lead to global instability and political tension

During the last decade and a half of growing environmental awareness, most developing countries have seen a steady and, in some cases, rapid increase in environmental degradation added to historic pressure on resources. Many newly industrializing countries have experienced a massive deterioration of their environment, with environmental problems associated with sudden industrialization and explosive urbanization being added to those associated with under-development and poverty.

It is true that many advanced industrial countries have seen significant improvements in environmental quality over the past decade and a half. This has stemmed from new institutions, legislation, policies and programmes designed largely to clean up the massive backlog of environmental degradation from the rapid growth of the fifties and sixties, and to react to and cure new situations as they arise It must be added, however, that in these countries the battle against conventional pollution is far from won. Resource deterioration accelerates and the economic and social costs of the "react and retrofit" approach to development continue to grow.

At the same time, a new generation of increasingly complex environment and development issues has

emerged, of concern to developed and developing countries alike. Some of these, although global or regional in nature, are largely a consequence of the production patterns of the heavily industrialized parts of the world. Climatic changes induced by rising levels of carbon dioxide, for example, which could have massive economic and social consequences. Transboundary air pollution in the form of acid rain now probably affects all continents, as do the use and misuse of chemicals and the unwise management of hazardous wastes.

Some problems reflect the incidental effects of certain economic, trade, agricultural, forestry, energy and other policies as applied at both the national and international levels Soil erosion and desertification, surface and ground water pollution, deforestation (especially of tropical forests) and the loss of genetic resources, are all examples--examples of how man is eroding the very basis for his own survival Some of these problems, of course, are reinforced by the voracious material demands of the industrial societies.

Some of the most threatening environment and development problems today are caused to a considerable extent by the widespread poverty and the inequitable distribution of resources within individual nations and among nations and regions Many of the most serious effects in the Third World are rooted in economic and social injustice and in a worsening imbalance in the relationship betweed man and his capacity to manage nature.

Hindsight demonstrates clearly that many current approaches to environment and development are not working. They are clearly not sustainable as we move into the next century, building another world on top of the one we have, and doubling, at least our demands on the planet's ecosystems. In the crudest sense, they are not even affordable If we continue to undertake development without regard to the environmental consequences of that development in the expectation that later--"when we are richer"—we can "react and retrofit", it is doubtful that even the rich countries will be able to afford to keep up, let alone catch up. It is certain that the developing countries will not.

New approaches to development

Hindsight also demonstrates forcibly that different approaches are possible.

It is possible to harness science and technology to development in ways that are environmentally favourable.

It is possible to expand food production enormously and in ways that are not only sustainable but which even expand the ecological basis for agriculture; and we must do it if the good earth is to feed all of our children's children.

It is similarly possible to develop energy, industrial processes, transportation and human settlements in ways that are environmentally sound.

It is possible, generally, to build environmental considerations into development. Our experience to date demonstrates that when this is done well, the result is not only more socially effective but also more resource efficient, and indeed, much more economical.

Changes are needed

We must recognize that the developing countries face enormous difficulties in mobilizing resources for development. Their plight is often such that they are forced to give priority to short term effects. Choosing environmentally sound paths to development would be better economy in the medium and long term. Ways must be found to assist the developing countries so that they can choose to invest in the future. Sound environmental policies are also an international resposibility.

We are convinced that this will not happen without significant changes in current approaches; changes in certain critical policies and the ways in which they are formulated and applied; changes in the nature of co-operation between government, business, science and people; changes in certain forms of international co-operation which have proved incapable of tackling many environment and development issues, changes, above all, in the level of understanding and commitment by people themselves, by organizations and by governments.

Sustainability

I have already mentioned sustainability. Policy paths to sustainable development are a central concern. This will compel examination of a range of policies in many directly relevant sectors such as agriculture, energy, forestry, industry, investment, trade and development assistance In any such examination a major purpose will be to identify those policies that can serve to promote development that is sustainable not only in the short-term but also in the medium and long term

Security and environmental risks

Security and the need to widen the definition of national security beyond military security to embrace economic and ecological interdependence and global environmental risks is a further concern.

In various parts of the world ecological degradation and environmental risks are becoming a significant causal factor in economic, social and political unrest. They are manifest in the growing migrations of "ecological refugees", the increasing frequency and intensity of natural disasters and the social collapse of exploding settlements. While these threats are fundamentally non-military, continued failure to address them adequately could lead to crisis situations in which military force is seen as a way out, at least in the short term. With environmental crises deepening in many parts of the world, environmental degradation could become a serious threat to peace in the future with military means employed to deal with non-military challenges to security.

Warfare, of course, constitutes an ever present threat to the environment. Historically, the scale and intensity of the threat has been increased considerably by technological developments. In 1977 a convention was signed outlawing military or any other hostile use of environmental modification techniques having "widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other state party". Unfortunately, at present only 43 states are parties to the convention.

The ultimate threat is nuclear war and recently deep concern has been raised over the short and long term consequences of the dust, smoke radioactivity, and toxic vapour which would result from a nuclear war. The possible creation of a "Nuclear Winter" as a result of multiple nuclear explosions would be a clear violation of the convention outlawing military environmental modification techniques. The "Nuclear Winter" had added an environmental imperative to the prevention of nuclear war. The existence of large stockpiles of nuclear weapons cannot serve any rational purpose but their own negation. A nuclear war cannot be won and must never be fought. We must find a way to build down the arsenals rather than succumb to the pressures to expand them.

World military expenditures have now reached unprecedented levels, and are estimated to exceed one trillion dollars in 1985. They continue to grow at an annual rate of 3-4 per cent in real terms. This constitutes a gross misallocation of resources and it forecloses opportunities to improve the human condition, including the environment on which we all remain ultimately dependent.

Interdependence

The growing interdependence of the international economic and political system is another central concern. It has become a dominant characteristic of many issues involving the environment and the ecological basis of development; embracing demography, migration, agriculture, communications, energy, industry, minerals, technology and financial transfers.

Interdependence is maybe not an inspiring word as such, it is not a strong old word like axe, wind, fire, wood, river, sky—in most languages, as in English, it has the air of a constructed intellectual word, coined to describe something newly perceived. What we have newly perceived in fact, is the complexity of the linkages and feedbacks. We now know that the most important feature of interdependence is not its isolated components, be they separate issues or separate nations, or regions, or polarities like North-South. The important thing about interdependence is the connections between and among the components. The limiting factor in working out policies that will permit us to live and develop in a sustainable way is not the capacity to analyse the elements of our interdependence with each other and with nature. The limiting factor is our incapacity to put it all together as a guide to future action.

The inter-related issues of tropical forests and biological diversity illustrate our apparent incapacity to put it all together. Although the forestry situation in the developed world appears relatively stable, forests in developing countries have declined by one half during this century, and are shrinking at an increasing rate, largely because of expanding agricultural pressures. The actual and potential socio-economic consequences of this are serious, primarily for the countries concerned : increased flooding, sedimentation of reservoirs, disruption of irrigation systems and losses of land and food production and ultimately touching on their trade and their overall capacity to develop.

Overcutting and inadequate investment in forest management and new plantations have seen 23 developing countries change from net exporters to net importers of forest products in recent years, putting additional pressure on their balance of payments. An additional 14 countries are similarly threatened.

Action to deal with the problem can be provoked by an analysis of certain trends. But such action (e.g. plant more trees faster) may not be too meaningful in terms of the problem of interdependence or of promoting sustainable development if it serves only to ameliorate certain effects in the short run. In order to be meaningful it would need to deal with the other sources of the interlocking syndromes of poverty-driven settlement, and policies favouring destructive colonization, agricultural harvesting practices, not to mention interdependence with genetic resources and watershed management.

Soil erosion and desertification is another classic example of an issue recognised and discussed at the international level. A conference was held, a programme of action, or rather reaction, was defined—and—so slight was the response of the international community that the Executive Director of UNEP publicly threw up his hands in despair.

And yet the world community did the accepted thing—recognized an environmental disaster and reacted after the event.

Why were the measures unsuccessful ? Could it be that governments instinctively sense that the "react and retrofit" approach is flawed? Do they feel that in reality desertification is connected to, or rather interdependent with, policies in other fields, such as agriculture and settlement ?

The web of interdependence stretches across the most apparently remote of our economic and social activities. The activities of the IMF as it lays down its conditions for a new line of credit can lead to environmentally destructive practices. A decision taken at GATT restricting the market for goods in which developing countries have an advantage can

slow down their development generally, thus extending poverty induced pressures on the environment and leading to something as apparently remote as, say, increased fuel wood cutting as kerosene imports are restricted. Even more remote, but still connected by that chain of interdependence, is a decision in GATT that might lead to the production of alternative goods involving non-sustainable uses of land or other resources

We must therefore increasingly question whether our consideration of environment as a sort of late stage add-on to our conduct of affairs, as a kind of political afterthought, is sufficient. I personally suspect that on the contrary, our consideration of environment will have to become the essence of political forethought

Broader view

From these remarks, you will understand that the Commission is going to take a very broad view of environmental policy, linking it clearly to economic and social development. This is essential—and it is overdue. Whatever the intentions of a decade ago, it is unfortunately true that, with few exceptions, environmental policy has todate been treated as a limited policy field, essentially an "add-on" to other policy fields, whose mission is to react to damage done and to cure it after the fact, its focus has been largely on the environmental effects of development, on ways and means to ameliorate those effects and on the costs and benefits of doing so

There is clearly a need now to shift the focus from the effects of environmental problems to their sources in macro-economic, trade and sectoral policies. Environmental policy needs to become in fact a horizontal policy field, an integral component of economic, social and development policy. Its mission needs to be seen as at least that of anticipating damage and reducing the negative external effects of human activity. At best, its mission needs to include the active promotion of economic and social policies that expand the basis for sustainable development.

This will not be easy I know. I have worked on it sitting in the chair of an Environment Minister and of a Prime Minister.

In my vew, a part of the problems stems from the fact that while industry and the sectoral agencies of government are sometimes seen as "targets" by environmental agencies they are seldom seen as "participants" in the development of environmental policies. "Environmental" policy is seen as something separate and distinct related to the protection or conservation of water, land, and species; perhaps as an "add-on" to economic and sectoral policy, but seldom as economic and sectoral policy itself. As a result, few environmental agencies have developed the institutional capacity needed to undertake the analysis required to attract seriously the attention of these agencies; nor have they acquired the professional resources and expertise needed to argue their case effectively in the interagency committees where advice on macro-economic, trade, agriculture and energy policy is formulated; and in the corridors where decisions are effectively takein.

Sadly, the same is true of most non-government organizations. They usually see their audience as the environment agency or the development assistance agency with whom they share common goals and can seek mutual support. They seldom see their audience as the central and sectoral agencies whose policies and decisions have such a critical impact on the environmental bases of sustainable development.

International co-operation

However, we do it, we must seek more effective ways to reach the key individuals in those agencies that have a significant impact on environment and development. This includes a whole range of agencies in government and industry, from the central economics and financial institutions, to those engaged in agriculture, energy, transport, trade and other activities. These are the agencies whose policies and investments have a significant impact on the environment They, and the policies they pursue, are indeed the source of many of the critical problems.

We must also find ways to involve these agencies more effectively in international co-operation on these issues. When the critical environment and development issues are considered against a background dominated by themes of sustainability, equity, security and interdependence, they emerge subtly changed. They appear as complex geo-political syndromes that challenge existing forms of international discussion and co-operation. Part of the challenge that they present stems from the way in which environment issues have been defined—conventionally defined—that is, as purely environment issues, without full consideration of the development imperatives and economic and sectoral policies underlying them. Another part of the challenge stems from the consequent fact that many of the key actors are missing from the discussions While respecting the complex realities of international co-operation, we will wish to look at possible new forms of international co-operation, forms that can break out of existing patterns and influence policies and events in the direction of needed change.

Common future

Earlier on, I suggested the title of our final report which will be submitted to the General Assembly for consideration in the fall of 1987, **Common Future.** That is really what we have to consider. We share a world economy; a world environment, which is the basis for the present and future world economy; and a stake in world development and a

decent and dignified human condition of life. We must learn to think globally and in a long-term perspective The world is shrinking rapidly. No single region or nation can isolate itself from the rest of the world. They share the responsibility for a common future.

We need to dig deep into our political consciousness and make environment and sustainable development a pre-fit not a retrofit. We must change our perceptions so that sustainable development and the conservation of our planetary heritage come to the forefront. We must come to see that many of our current approaches add up to a sort of piracy against our children that a truly civilized world can no longer afford or tolerate.

Environment is not a concern which is confined to the rich countries, those who can "afford" to pay attention. We cannot afford for anyone to neglect it The penalty of neglect is to undermine the very growth we strive to accomplish Growth which does not include environmental considerations is like a house which is built on sand

Our world is an interdependent world. Decisions made by the authorities in one society will affect conditions of life in other societies which have no access to the process of decisions. While the benefits of a free flow of goods, services, people and ideas will contribute to human welfare, the free flow of pollution and waste has exactly the opposite effect. We need international co-operation and regulation to promote and preserve equity. We can only create a common future if we can cope with the **Common Crisis** which the Brandt Commission addressed and build peace on the basis of the concept of **Common Security** as the Palme Commission pointed out

We have to learn to think and act as citizens of one world We have one common future That must be the prespective which inspires and gives direction to our work Humility, dedication, competence and hard work are needed for us to succeed. We are eager to start

(Courtesy : Future—UNICEF)

(Continued from page 7)

Resource Recyling, a way out!

Each of the Resource Recyling Unit is not only river cleaning unit but also like any factory should produce products for earning profits for marketing products As conceived, the Resource Recyling Unit will spend 23 rupees per person per year to run the unit and earn 34 rupees per person per year by selling the product. So the entrepreneur running each unit would make a profit of 11 rupees per person per year. Thus the entrepreneur makes an annual profit of 11 lakh rupees if the unit serves a population of one lakh. It is, therefore, important to develop a cadre of entrepreneurs who will run the systems with profit, This is also a part of the Ganga Action Plan. No countries in the world have ventured to clean a river of the size equal or near equal to the Ganga. Remember, we are dealing in a river whose basin size is 900,000 square kilometre and the length of the main course of Ganga is 2500 kilometre. It covers 26 per cent land mass and carries 25 per cent of India's water wealth. The people of India, so also the other nations, will watch the progress of cleaning Ganga with great interest. □

(Courtesy : All India Radio)

Measures to control environmental pollution

Reports have been received that in some areas indiscriminate use of pesticides and herbicides resulted in pollution of water and food. However, so far no report of pollution of soil|groundwater due to the use of fertilizers has been received.

Environmental safety from toxic effects of pesticides is ensured by registering all the insecticides (meant for import, manufacture, sale or use in the country) under the Insecticide Act, 1968. The Registration Committee constituted under the Act grants registration only after satisfying itself that the chemical is safe to man, animals and environment in general. Since some environmental effects are observed after several years of use, a Pesticide Environment Pollution Advisory Committee has been constituted under the Insecticide Act, which continues to review the pollution status from time to time. As a result, some insecticides have been banned in the country and use of some has been restricted Recently, a Committee has been constituted by the Ministry of Agriculture to review the use of some persistent insecticides in the light of new alternatives or approaches available.

The Indian Council of Agricultural Research and the Department of Environment have initiated programmes to assess residues of various pesticides in food, fodder, water, vegetables, etc. Various scientific organisations like ICAR, CSIR, agricultural and non-agricultural universities, Department of Science and Technology and the Department of Environment are engaged in developing safer approaches or alternatives to persistent pesticides.

COCONUT PRODUCTION RISES IN KERALA

During 1983-84, coconut production in Kerala was 2694.7 million nuts as against the All-India production of 5871.0 million nuts. The production in Kerala, thus, constituted 46 per cent of the total coconut production in the country. The total area under coconut plantation in Kerala was 676.4 thousand hectare as against the 1154.8 thousand hectare in the country. Final estimate of coconut production for crop year 1984-85 had not yet become due from the States.

The international drinking water supply and sanitation decade

A. L. D' Souza

Non-availability of safe drinking water and lack of proper disposal of human waste constitute denial of basic human rights. Diseases like blindness, elephantiasis, diarrhoea, etc. are their end products, says the author. Reviewing the UN International Drinking Water Supply and Sanitation decade, launched in Novembor 1980, he emphasises that the basic necessities of clean water and sanitation are paramount and more funds be provided for this. Interestingly, in the end, what he pleads for is the vital role of women in making this decade a success.

THE INTERNATIONAL DRINKING WATER Supply and Sanitation Decade, which was launched in November 1980 by the United Nations' General Assembly, is very significant in that it seeks to provide the most essential requirements for human survival to more than two thirds of humanity.

The unavailability of safe drinking water and proper means of disposal of human waste constitute a denial of a basic human right, and, in the opinion of the Brandt Commission, is an intolerable situation.

The consequences of this situation are astounding. At any one time, it is estimated that there are approximately 500 million people partly blind with trachoma, 250 million people with the swollen limbs of elephantiasis, 200 million passing blood in their urine because of schistosomiasis, 160 million people with malaria, 100 million people with diarrhoea

In India alone, it is estimated that over 73 million mandays are lost every year as a consequence of waterborne diseases. The cost to India in terms of medical treatment and lost production is around 4,500 million rupees annually

Why should children suffer?

The most vulnerable section of the population is children below the age of five UNICEF estimated that 1000 million children in developing countries have no access to clean drinking water. The Brandt Commission found that between 20 and 25 million children below the age of five die every year in developing countries, and a third of these deaths are from diarrhoea caught from polluted water. In India alone about 1.5 million children die annually because of diarrhoea

The real tragedy of this situation is that most of these childhood deaths are preventable. Barbara Ward, the eminent British Economist and author, described children as "the most innocent and most promising of all citizens of Planet Earth". Yet she declared, they are "the endangered species".

It is in order to correct this situation that the United Nations has taken up the challenge of providing safe drinking water and proper disposal of human waste. The target has been set for the year 1990.

A difficult target

For India, however, the achievement of the target poses a formidable problem. At the beginning of the decade in 1981, only 31 per cent of the rural population had access to water By 1990, it is hoped to provide water to the entire rural population. On the sanitation front, the picture is more dismal. Almost the entire rural population of about 522 million people now defecate in the open. The target is to provide access to sanitary facilities for disposal of human waste to 25 per cent of the rural population by 1991.

The magnitude of the problem is evident from the fact that an estimated 12.78 million urban households have dry latrines which need to be converted into

pour flush latrines. The present rate of conversion is approximately 25,000 latrines a year. Even if the rate of conversion were 100,000 latrine a year, it is estimated that it will take more than 100 years to complete the work. In addition, there are a staggering 10.54 million urban houses which have no latrines at all and which need to be provided with them. And this is only the size of the urban problem which affects but 20 per cent of the population.

Allocate more funds !

The Government of India has stepped up its allocation for water supply and sanitation programmes from 49 crore rupees in the First Five Year Plan to 4177 51 crore rupees in the Sixth Five Year Plan. However, the estimated requirement to achieve the goals of the decade is 14,700 crore rupees.

Globally, the World Bank has estimated that 600 million US dollars would be required to provide water and sanitation to all by 1990. This works out to about 60 million dollars for each year of the decade. Against this, the annual investment in water and sanitation was around 6-7 billion dollars—only one tenth of the requirement.

Basic necessities paramount?

If we consider the amount which the world spends on armaments—1000 billion dollars (trillion) a year. or about 3 billion dollars each day, 2 million dollars each minute, it should not be difficult to find the resources to provide the basic necessities of water and sanitation for the people It needs just 20 days of military expenditure to be diverted to provide the total annual requirement for the global water and sanitation decade programmes The W.H.O points out that 10 million dollars a day are spent on tranquilizers for non-essential uses The world also spends about 240 million dollars a day on cigarettes.

In his keynote speech to the General Assembly in 1980, the then Secretary General, Kurt Weldheim stated that : "The provision of safe water and sanitation does not merely means happier, healthier, citizens ; it also means increased economic productivity. In turn, improved agricultural production or increased earning power brought about by better health leads to high nutrition, further reducing the susceptibility to disease. When millions of a country's citizens are undernourished and sick, they cannot possibly make a meaningful contribution to their nations' economic and social growth. Investment in human potential is not only a moral imperative; it is also sound economics".

At the same General Assembly session, the Director General of W.H.O. Dr. Halfdan Mahler stated that : "The number of water taps per 1000 persons will become a better indicator of health than the number of hospital beds."

Urgency and commitment !

The Government of India is fully aware of the urgency to find a solution to this serious problem, and is firmly committed to the achievement of the goals of the Water and Sanitation Decade. The United Nations Development Programme, which coordinates the efforts of other U. N. agencies, is providing active technical, financial and educational support for this programme. However, for the goals to be achieved, the participation of the people at all levels and especially of voluntary organisations is essential.

What women can do!

Women can play an especially vital role. Since they bear the burden of collecting water and have a critical influence on family health, they benefit most directly from both water supply and sanitation.

Paradoxically, they are typically the least consulted in decision-making processes.

In helping to achieve the Decade's goal, women can be especially important in several areas

They can help develop an awareness of the importance of clean water and sanitation in their families, work plans and communities;

They can work through their local clubs and associations to mobilise community action in favour of new facilities . . . . initiate projects which will attract support from men and outside sources . . . . organise work-crews. . . . .generate financial resources

Women can also help in choosing and testing hand pumps and other technologies which they will later use daily.

Any attempts to change attitudes or social practices should involve women as the frontline workers.

The strategy to eliminate 80 per cent of illnesses which are directly related to water and sanitation is heavily dependent on the participation of women.

Health care and water !

The National Health Policy explicitly calls for the participation of the local communities in the official efforts. The success of the decentralised primary health care systems depends vitally on the organised building up of individual self-reliance and effective community participation.

The policy statement says : "the provision of water supply and basic sanitation facilities will not automatically improve health. The availability of such facilities should be accompanied by intensive health education campaigns for the improvement of personal hygiene, the economical use of water and the sanitary disposal of waste in a manner that will improve individual and communty health."

The International Drinking Water supply and sanitation decade is everybody's concern.

Courtesy : All India Radio

Development perspectives in rural India

Dr. P. C. Joshi

Analysing the development perspectives in rural India, the author highlights a wide gap in objectives and actual performance. He says failures in land and water management, the failure to explore non-farm opportunities within the rural economy, is meagre facilities for rural development in proportion to total human needs, massive leakages in the 'trickle down' plans enriching middlemen, contractors and corrupt elements in the administration are still the dampers on the Gandhi-Nehru vision of creating an economic system promoting the greatest good of the greatest number known in common parlance as growth with social justice.

THE DEVELOPMENT of rural India since independence is an exceedingly complex phenomenon, full of puzzles and contradictions. It is also a creative challenge having perhaps no parallel or precedent in world history.

The 19th or early 20th century perspectives and models of rural development are not transferable to India as they are the products of obsolete historical circumstances. Under these past patterns, small peasants and artisans—the backbone of the traditional economy and society—were brutally exproriated from the land and the loom, and turned into the proletariat, swarming the newly emerging industrial centres as the reserve army of industrial labour. They were turned into victims of what was called primary accumulation of capital and technological modernisation. Such expropriation of small producers under the Enclosure Movement and the rise of modern industry in Western Europe progressed without much social protest or political agitation. This happened because the commitment to social justice and mass welfare, the democratic institutions of adult franchise and the welfare state, and the rights of trade union organisation and agitation were still conspicuous by their absence.

Is such a development perspective open to India in the late 20th century ?

In sharp contrast to Western history, the values of social justice and the institutions of political democracy have struck deep roots in Indian consiousness, much before India has achieved modern economic growth. Further, the Gandhi-Nehru vision of a new India is committed to a development perspective which will bridge the gap between villages and the towns and cities and between classes and masses. The Directive principles of the Indian Constitution, the growing awakening of the masses and their expectations for a better life do not provide legitimacy to a development path which benefits the few but neglects the masses.

India's perspective of rural development with social justice is thus deeply rooted in a sense of history, in the finer values of the Indian Tradition as expressed in *Bahu Jan Hitay Bahu Jan Sukhay* and in the Gandhian concern for the uplift of the 'dumb, half-starving millions' or the *Daridranarayan.*

The vision of new rural India

This perspective strikes at the very root of India's hierarchical and inequality-ridden socio-economic structure which had become a built-in depressor for growth specially under colonial rule The vision of a new Rural India—dynamic, egalitarian and democratic and blending the finest values of the West and the East—is truly revolutionary in its implications though not yet in its impact. It seeks growth based

on application of modern science and technology without the acquisitive spirit and the soulless individualism associated with it. It calls for strategies and programmes to remove the major constraints on growth left over by conomal rule viz. an irrational and injustice-ridden land system which protected and promoted the parasitic classes at the top and exploited and oppressed the productive classes of peasants and labourers at the bottom; technological primitivism arising from lack of motivation and resourcelessness of the peasants who were mostly tenants and tiny cultivators and their lack of access to the fruits of knowledge the lack of supporting infrastructure specially in regard to water and credit, growth-oriented administration and scientific research, system suited to Indian conditions of land scarcity and labour surplus, and further, lack of communication resulting in rural isolation and so on and so forth.

A task of social engineering ?

Transforming rural India is thus a task of social engineering on a scale which is unprecedented It is expected to cover more than half a million villages and almost four fifths of India's seven hundred million population. It is meant to cover people living under great variations of climate, ecology, social structure and culture for whom all-India planning from the top alone is not enough, if it is not supported by grass-roots mobilisation. It involves people speaking a bewildering variety of languages and dialects, creating complicated problems for understanding the rural mind and communicating with the rural masses.

It must encompass intricate problems of improving crop production, animal husbandry, fishery, forestry, arts and crafts and other economic pursuits practised under different types of rural settlements, land tenure and resource endowments. These make it obligatory to innovate area-specific technologies and strategies and also agencies for implementing schemes and projects at the ground level. Above all, in a country of sub-continental dimensions like India, rural development covers a vast mass of humanity living at the same time in several centuries and at several levels of civilisation. It means imaginatively leading them, step by step, towards entry in the twenty-first century. Indian rural planner has to be one capable of combining a bird's eye grand view with the earth-worm's nearness to grassroots realities.

Still away from the grand vision !

We are still far from meeting the institutional technological and motivational requirements of this multidimensional enterprise What kinds of programmes and strategies have been formulated for realising this grant vision ? How have the Indian villages responded to the message of growth with equity ? What is the character and shape of the emerging society and how far it corresponds with the Gandhi-Nehru vision ? These are questions which all thoughtful Indians are asking today.

The first thing to note is that the myth of a conservative, change-resisting, superstition-ridden and fatalistic Indian peasant propagated by colonial theorists has been shattered by massive evidence from all parts of the country after independence. This evidence confirms the resilience and responsiveness of the Indian peasant to the growth stimuli. The peasant behaviour in independent India contradicts the dismal forecasts by colonial thinkers and rulers. For instance, in the opinion of the Simon Commission (1930), "any quickening of general political judgement and any widening of rural horizons beyond the traditional and engrossing interest of weather and water and crops and cattle, with the round of festivals and fairs and family ceremonies, and the dread of famine or flood—any such change from these immemorial pre-occupations of the average Indian villager is bound to come very slowly indeed."

Failure to involve masses !

The peasant no doubt continues to be deeply concerned with all these but he is also intensely receptive to every message and stimuli from outside which promise to improve his condition, to strengthen his contact with the outside world and to enlarge his vision and the range of his interests. If there is still a wide gap between the growth potential and performance, expectations and results, it is not explained any more by the peasant's restistance to change but by the imperfections of the growth strategies and instruments and their failure to involve the masses.

Achievements in the rural sector

Some of the important achievements in the rural sector are quantifiable even though the social mobilisation from above and mass initiative from below which has facilitated them are largely non-quantifiable.

The Indian agriculture achieved a growth rate of about 2.7 per cent during 1950-51 to 1983-84 which is in sharp contrast to a meagre rate of less than 1 per cent during the first forty years of this century under the final phase of colonial rule. Equally significant is the fact that while the pre-independence growth rate was less than the growth rate of population, the post-independence growth rate is higher than the population growth. Independence thus marks a watershed, indicating a sharp break from the chronic agricultural stagnation characterising the colonial period which converted India into a land of recurrently famine-striken and chronically hungry people. The conquest over famine and the marked advance towards food self-sufficiency are major events of the post-independence period It is also important to record that the centres of growth are

not the States in the Eastern region which were exposed to the so-called "civilising" and "modernising" influences under the "tutelage" of the British for the longest period. These Eastern States still constitute the regions of retarded growth and concentrated mass poverty. The dynamic regions lie in the wheat-producing states of the North West and areas in certain other parts of the country. Here the supply of high-yielding varieties of seeds and fertilizers under conditions of assured irrigation to large and middle sized farmers have evoked unprecedented initiative and response from them. These farmers belong to traditional peasant castes combining agricultural skills with rational attitudes, enterprise, and saving investment propensities of a very high order. Behind this impressive performance, therefore, lies no doubt the technological factor. But one must also give full credit to the *human factor*, the dynamic role of the peasants who have to a considerable extent been released from traditional constraints by institutional reforms, despite their half-hearted implementation. In particular, land reforms have brought about a significant shift from *absentee landlordism* to owner-cultivation, even though they have failed to bring about the desired transfer of land from big landowners to vast mass of actual tillers at the lowest rung of the agrarian ladder, that is to say, from large farms extensively cultivated to small farms intensively-cultivated through surplus labour.

Objectives vis-a-vis performance

If the gap between objectives and actual performance still remains very wide, the causes of this are traced to the failures in creating a land system which destroys root and branch the control of non-tillers on land failing to promote the access of actual tillers to land or to the fruits of land. Equally noteworthy is the failure to create a water system which eliminates the uncertainties created by the vagaries of weather and provides the firm basis for the practice of scientific agriculture. In view of the population explosion, the dimensions of increase in food output required now are staggering. This challenge before India in the coming years can be put in quantitative terms: India was able to achieve an incremental output of 100 million tonnes from 50 million tonnes in 1950-51 to about 150 million tonnes in 1948-85 or in a period of 35 years. The country has now to *increase its output by 70 million tonnes over a period of 15 years only*. This is a gigantic task which requires extending the Green revolution to the vast masses of small and marginal farmers who are still outside the reach of the new technology and the new instructions, the promoters of agricultural modernisation. The concentration of the benefit of growth in selected regions and in selected classes of large and middle farmers is the major constraint now on growth with justice. It has created the phenomenon of socio-economic dualism--of cleavage between the modern sub-sector and the traditional peasant sector. On account of this dualism more than 40 per cent of rural masses are still below the poverty line and not yet in a position to cross the barriers of poverty. No doubt the elimination of the spectre of famine is the brighter side of the Green Revolution. But the persistence of land hunger and insufficient access to food and work of a very large proportion of the rural population constitutes its darker side. It is an evidence of the failure of the growth programmes based mainly on 'trickle down' approach to poverty eradication and only partially on the concept of direct attack on poverty.

A very grim picture indeed!

A quick look at the indicators of some of the elementary aspects of rural life also reveals a grim picture. The infant mortality rate in 1981 was 121 per thousand. In 1978 the death rate for children of upto 4 years of age was 45 for males and 52 for females. In 1976 more than three quarters of all live births in rural India did not have the benefit of access to any trained medical practitioners. Two thirds of the total population of India do not have access to safe drinking water. About half of the villages do not have a road or a single electricity connection. Nearly one third of the primary school children is not enrolled in school and nearly two thirds of the adult population are illiterate, female literacy lagging far behind male.

No doubt there are several success stories in the localised regions regarding anti-poverty, anti-illiteracy and primary health care and employment promotion programmes under both Government and voluntary auspices. The Employment Guarantee Scheme of the State of Maharashtra the Antyodaya schemes in the state of Rajasthan, the preferential loans under the Small Farmer Development Agency Programmes and numerous other schemes for economic relief and social welfare deserve mention. But the facilities created are still meagre in proportion to the total human needs and there are massive leakages enriching middlemen, contractors and corrupt elements in the administration.

Failures in land and water management!

Above all, the failures are most pronounced in the spheres of creating a poor-oriented land ownership and land utilisation patern on the one hand and water development strategy on the other. Equally important is the failure to explore non-farm opportunities within the rural economy. These have contributed the most in frustrating the Gandhi-Nehru dream of creating an economic system promoting the greatest good of the greatest number.

What about the future? For the first time a class of large farmers has come into being as the motive force of change in Indian agriculture. It is certainly likely to continue to grow in the proximate future.

(continued on page 23)

Nuclear energy: some issues and choices

(Part 4)

Shibdas Burman

In this resume the author draws attention to some of the problems of reactor safety in LWR. He also discusses a crack which appeared in a pressure tube in a Candu reactor. Lastly, he studies some of the problems left behind when the life of the reactor ebbs out, namely, the question of decommissioning of the site and the disposal of radioactive wastes.

IN THE PREVIOUS serial we have viewed the performances of Candu and some of its rivals. The aspects of reactor safety was briefly touched upon. In this issue and in the one to follow we shall study some of the problems left behind when the life of the power station ebbs out, namely, the question of decommissioning of the site and the disposal of radioactive wastes. This subject, though unglamorous, is very important both for the present time and for the future generations. But before we get busy with it let us glance over a few more words on reactor safety.

Safety

"If something can go wrong, sooner or later it will go wrong," Murphy's law states. This philosophy is believed implicitly by good engineers and scientists. There are elements of both order and haphazadry in nature. Several major studies were made in the US on the consequences of all the safety systems in a tile radioactive isotopes in the fuel being released to the atmosphere. The answer which came back from these studies was that the consequences could be very serious indeed. This finding underlined the importance of preventing nuclear reactor meltdown accidents. This is the reason that the US Nuclear Regulatory Commission and the US Department of Energy required so many redundant safety systems on nuclear power plants that both the nuclear industry and the nuclear regulators got convinced that the likelihood of a reactor meltdown accident had been reduced to a negligible level.

In the real world we live in there are ways of making mistakes beyond the dreams of most technologists. It is unlikely to envisage the possibility of a man with a candle setting fire to cables under the control room, thereby disabling the emergency core-cooling system. But at the huge Brown's Ferry nuclear station in Alabama this event actually happened in March 1975. The resulting fire was brought under control in seven hours. Fortunately, other pumps could be used, not intended for use as emergency systems, to prevent the meltdown of the reactor core.

The massive failure of safety systems and the confusion which has occurred repeatedly at nuclear power plants, with serious damage at the Three Mile Island in 1979—have thrown the confidence of nuclear regulators and the nuclear industry into question. Frank von Hippel and Jan Beyea have drawn attention in an article published in the Bulletin of the Atomic Scientists in August/September 1982, to the possibilities of the reactor containment building offering increased public protection—it is the last barrier between the radioactivity released from a molten core and the outside world.

Both the Pressurized Water Reactor (PWR) and the Boiling Water Reactor (BWR) are called *Light*

The views expressed in this article are those of the author and not of the office he works in.

Water Reactor (LWR), because both of these run on enriched uranium The coolant in the former case is pressurized light water and in the later one it is boiling light water. The PWR operates at a pressure of about 150° atmospheres This is sufficient to prevent the water boiling at its operating temperature of about 300°C. The reactor is housed in a welded steel pressure vessel Heavy demands on the quality of fabrication of the pressure vessel and other pressurized pipes and components are placed by the high operating pressure. The BWR operates at a pressure of about 70 atmospheres and a temperature of about 300°C; under these conditions the water turns into system

In the accident at Three Mile Island, when the core of the PWR reactor became over-pressurized, primary coolant was released through a relief valve to a low pressure tank When the pressure relief valve failed to reclose, pressure built up in the relief tank causing a rupture disc to burst and primary coolant to spill out into the containment building, according to the report of the U.S President's Commission on the Accident at Three Mile Island (1979). The analyses of the bullet-sized bits of uranium oxide (UO_2) in 1982 show that temperatures reached at least 2815°C, the temperature at which UO_2 melts. This means that the core actually began to met during the accident The Three Mile Island mishaps show that the small and far more likely slipups may be just as disastrous as the big ones.

One of the safety issues is the problem of light water reactor vessel cracking, known as the "thermal shock". At the heart of the problem is the steel vessel which in pressurized water reactors, holds the radioactive fuel and the water that cools the fuel Initially, the metal cylinder is very tough, but in course of time the tough metal gets weakened by neutron bombardment from the reactor core The steel starts loosing resilience. After about a decade, the most heavily irradiated section of the vessel (the midline) becomes quite brittle. Even at relatively high temperatures, in the range of 220° to 290°F, the vessel becomes brittle. Flaws in the vessel become cracks, and under certain circumstances, the cracks may burst, spilling the water which is needed to cool the fuel core.

"This could happen, for example, if he hot (550°F), brittle area at the middle of the vessel," reports Eliot Marshall in *Science* on 13 November 1981, "were suddenly doused with cold (40°F) water at very high pressure (2200 pounds per square inch). The scenario is no implausible. It is precisely what could happen if there were a break in the main steam line outside the pressure vessel, followed by a deliberate attempt to cool the reactor while maintaining high pressure in the vessel. The heat shock and pressure would put tremendous stress on the fragile section of steel. A crack might develop, burst, dump water on the floor faster than emergency cooling systems could make up the loss, and lead to an accident at least as servere ase the one at Three Mile Island." US Nuclear Regulatory Commission's Richard Johnson says, "Asking me whether this is the most important safety problem for reactors is like asking someone who's in the middle of the Battle of the Bulge what's going on in the war."

A Case of Candu

In the summer of 1983 a 2-meter crack appeared in a pressure tube at the heart of one of the Candu reactors at Pickering, Ontario The Canadian findings would be of interest to the nuclear industry around the world, because the alloy, Zircaloy-2, which became brittle and cracked at Pickering's unit 2, is also used as a cladding for fuel in most of the world's reactors.

The Candu reactors have a series of tubes housed in a tank. The tank is called a calandria and it is perforated by calandria tubes, each one of which contains one pressure tube, inside which are several bundles of fuel rods.

When the reactor is working, the materials of the reactor undergo fierce stresses from radiation. The stresses change the properties of the materials. Heavy water tends to be split up by the radiation into hydrogen and oxygen.

As reported by Tom Wilkie in the *New Scientist* on 6 October 1983, the scientists examining the spilt pressure tube at Chalk River have found a larger-than-expected coating of oxide on the inner surface of the tube and several blisters of zirconium hydride on the outside It is inferred that more hydrogen than expected must have penetrated the metal of the tube Hydrogen is known to make zirconium alloy brittle, this may explain the crack in the tube

For units at Pickering other than the units 1 and 2, the AECL designers chose an alloy of zirconium containing 2½ per cent niobium This alloy has a higher mechanical strength and is more resistant to corrosion than the usual Zircaloy-2. The walls of the pressure tubes can be made thinner by use of this stronger metal Because of the wall they will absorb fewer neutrones, thus improving the reactor's performance Thus, only the units 1 and 2 at Pickering will be affected if tests on the undamaged tube show that "hydriding" is a general problem in the unit 2 reactor.

An important plus point in case of Candu reactors is that these are designed to allow pressure-tube replacement. More than 65 pressure tubes which had been improperly installed in units 3 and 4 at Pickering were replaced in the mid-1970s. In 1982, two tubes at the Bruce nuclear power plant were replaced. These tubes had developed hydride cracks.

Decommissioning

All nuclear facilities must be decontaminated and decommissioned (D&D) at the end of their lives in

der to prevent deliberate or inadvertent releases of dioactivity to the environment. Nuclear reactors ive only a 30-year operating life. The reactor su- ;rstructure is built to withstand explosives, 300 iles-per-hour wind loads, seismic loads and airplane ashes. Conventional demolition techniques will be effective (P. N. Skinner, 1977). Moreover, to omplicate the issue, the radioactivity with the reac- ır must be contained during D&D.

According to P. N. Skinner the New York Attor- ey General's Office has computed that the D&D for typical 1000 MWE reactor will cost $ 316 million 1977 dollars. According to John F. Shea III, who came a Counsel to the U.S. President's Council on nvironmental Quality in 1979, in an article publish- d in the Annals of the New York Academy of Scien- es in 1981, the utilities in the US are not required make any financial preparations for the inevitable &D operations. Following a study in 1977 by the S General Accounting Office, utilities in US are in act doing nothing. Moreover, J F. Shea III states that here are no regulations in US requiring a utility to rovide technical plans for D&D at the time of an pplication to build a nuclear facility. "This is a natter desperately in need of clear policy and plan- ning. Otherwise, if a utility defaults, a state may be orced either to pick up the bill for D&D or worse, o live with a radioactive monument requiring con- tant surveillance and care (J F. Shea III, 1981).

Some utilities in US make grossly inadequate pro- ections for D&D costs. For example, for the South Texas Project the utility asserts that it will cost only $10 million (in 1980 dollars) to D&D a 1250 MWe acility.

The shipping port Case

The first commercial nuclear power station in the US was the Shippingport station in Pennsylvania, and was dedicated on May 26, 1958. Steve Olson reports Science 84, September 1984) that over a period of four years, starting from the spring of 1985, the demolition experts are going to be sawing, hammering and blasting Shippingport to pieces. Ear- lier, on Jan 25, 1983 Japan started demolition of its BWR Japan Power Demonstration Reactor (IPDR) It has a thermal output of 90,000 kW (45,000 kW initially). The total cost for decommis- sioning of JPDR is estimated about 20 billion yen. (Science & Technology in Japan, v. 2 n.6, 1983).

With large commercial reactors, the workers will have to cut up the pressure vessel before they can remove it But in case of Shippingport's vessel. the US Department of Energy believes that there is an easier way to dispose of it. As the demolition nears completion, writes Steve Olson. workers will erect a tower above the pressure vessel and pour concrete into the cavity around the vessel. A which will hoist the 770-ton steel and concrete package and place it on a heavy-duty transporter that will then haul it to a barge on the Ohio River. Its ultimate resting place will be the sprawling energy reservation at Hanford, Washington. The entire four-year job, the Depart- ment of Energy calculitates, can be done for about $80 million.

Marvin Resnikoff of the Sierra Club's Radioactive Waste Campaign says that the Shippingport experi- ences "is definitely not analogous to what is going to happen at a large reactor". "Large plants will have operated much longer and at a higher power lower", Resnikoff continues. Compared to the Ship- pingport case, a large reactor at shutdown will con- tain several hundred times as much radioactivity as at Shippingport.

Besides Shippingport, several other reactors in US are shut down, namely, the Indian Point 1 reactor in Westchester County, New York, the Dresden 1 reactor the Three Mile Island 2 reactor, the Hum- boldt Bay reactor on the northern California coast sited near earthquake faults, and the San Onofre 1 reactor in southern California. In 1979 the Three Mile Island 2 reactor came close to meltdown and it remains contaminated. It is reported that the $ 1 billion cleanup will extend until 1988, after which its owners will decide on the next course of action to undertake—whether to restart, "mothball" that is, garding the plant after shutdown and dismantle it some years later), or dismantle the plant.

Steve Olson writes, "No law says that utilities must dismantle their reactors as soon as they stop operat- ing. Utilities, in fact, have good reasons for putting off decommissioning as long as they can. The most obvious involves a problem all too familiar to the nuclear industry—what to do with the radioactive wastes." The risk that the utility will not be there to decommission a plant at a future date has been foreseen. The US Nuclear Regulatory Commission has proposed a rule, writes Olson, requiring utilities to establish decommissioning funds, so that the peo- ple who use a reactor's electricity also pay the costs of decommissioning. ☐

(To be Continued)

(Continued from page 20)

The prospect for the vast mass of petty cultivators of the present day is far from clear. The model of upward mobility is uncrealistic for them If for no other reason, their very number makes it impossible for many of them to become large farmers. In the light of historical experience the options for them can be clearly identified. Whether they will be marginalised and eliminated as a class as in Western Europe ; or whether they will continue at low levels of productivity and low levels of living alongside of the large enterprises, as in Mexico ; whether they will be able to adopt modern methods and perhaps be able to combine farming with non-farm employment, as in Japan ; or whether their destiny will be similar to neither of these previous patterns of development but lead to a new cooperation pattern ? ☐

(Courtesy : All India Radio)

Conservation and Corbett National Park

S. M. Kumar

Conservation has emerged as a major ingredient of the planning process in India. There is an increasing emphasis on protecting environment from pollution. Industrial growth is good for the economy. But its side effects like air and water pollution are harmful. The pressure of growing population has also contributed largely to the degradation of environment. Human beings have perforce become more and more detached from nature. Forests have diminished gradually and many species of wildlife have vanished for ever.

The United Nations had launched a global environmental programme under the name Man and the Biosphere. It was started in 1971 by UNESCO to create a worldwide awareness about conserving nature and its resources. It has achieved varying degrees of success from country to country.

The Government of India has taken several measures in recent years to promote ecological and wildlife conservation. The Wildlife Protection Act came into being in 1972 to promote a legal basis for conserving the extant faunal species. The Forest Conservation Act of 1980 intends to check indiscriminate diversion of forest lands which are the main habitat of wildlife in the country. As a result, there are now fiftythree National Parks and 247 Sanctuaries as compared to only nineteen National Parks and 205 Sanctuaries in 1980. The area under the national parks and sanctuaries at present is three per cent of the country's landmass. It accounts for about twelve per cent of the forest cover.

A National Wildlife Action Plan has been adopted by the government recently to provide the framework of strategy, programmes and projects for wildlife conservation in future. Special projects are going on to protect tigers and crocodiles.

The Department of Environment has set up a Research Committee to promote environmental protection and maintain ecological balance. Several programmes have been taken up for pollution monitoring and control.

In this article, the author, who recently visited the Corbett National Park (the Corbett National Park is one of the 53 National Parks in the country) gives a vivid and lively account of what he observed there.

ABOUT 250 KILOMETRES from Delhi, nestling in the Himalayan foothills, lies the Corbett National Park, the oldest Wild Life Sanctuary in India. Locted in Pauri Garhwal and Nainital districts of Uttar Pradesh, it completes half a century's existence this year.

The park perpetuates the name of a legendary figure, Jim Corbett. Three decades after his death, Corbett's image lingers more as a protagonist of conservation than a trigger-happy hunter of big game.

Although the Park's limits begin from the outskirts of Ramnagar, the 30-kilometre drive from Dhangarhi to Dhikala in its interiors makes all the difference. A narrow path meanders through the wooded hills. All along there are steep heights and descents criss-crossed by dry stream beds until the meadows of Dhikala are sighted.

On the edges of an extensive clearing and the banks of the perennial Ramganga river, Dhikala is a cluster of rest houses. Between autumn and summer, the place is open to visitors But during the rains, it is almost impossible to reach there.

Dhikala is the heart of the 525 square kilometre Corbett park. The surroundings at Dhikala are idyllic, Tall and mighty trees of sal dot the lush green landscope. The Ramganga flows with a gurgling sound all the time Nature has amply endowed Corbett with its bounties. The fresh air, crystal clear water and the roaming herds of wild animals create an unfamiliar but welcome environment. Every bit of the forest is conserved. Its ecosystem is largely pristine. Everything seems to be in place in much the same way as probably Nature night have created. The trees grow and die naturally. The dead trunks remain where the trees fall down on completing their life span. No disturbance is caused in the belief that all forms of life in the forest are inter-dependent in a complex chain.

To go inside the dense vegetation of Corbett is an experience. Imagination turns into reality every now and then. An elephant ride and a drive through the forest unfolds a wide vista of its wealth. With an element of luck one may sight a muster of peacocks, a drift of hogs, a herd of wild jambos, a clonder of cats, a shrewedness of apes, a skulk of foxes, a drey of squirrels, a peep of fowls, a gaggle of geese, a padding of ducks, a sloth of bears, a seize of herons, a leap of leopards, an exhalation of larks, countless deer, basking crocodiles frolicking otters, slithering pythons and dancing king cobras. But tigers remain the star attraction. They live in their peripheries which they demarcate themselves on the principle of survival of the fittest. Numbering 90 at present, they lord over the forest, perhaps under the realisation of a protected living. At times a tiger can be seen gacing majestically or sprawled across the road. It is least mindful of the watchers. Indeed, one tiger has become so fearless that it has freely posed for phoographs. The forest staff call him Dhitthoo, i.e., the bold one, and recognise him easily.

But a tiger's behaviour is always unpredictable. It may suddenly turn a man-eater as happened once in June 1982. Biologists believe that human flesh is no part of a tiger's diet. Although it regards human beings as superior, yet accidents can always happen. When a tiger turns man-eater, the attempt is to trap and send it to a zoo. It is rarely killed. Corbett's man-eater was caged adroitly and now it lives in the Kanpur zoo.

An animal census is held from time to time. It is a complex process. The fast census in 1982 revealed some interesting figures : 91 tigers, 47 leopards, 38 bears, 131 elephants, 37 crocodiles and 17 fresh water alligators. It was considered a remarkable revival of most of the species which were on the endangered list not very long ago. Deer and monkeys at Corbett have multiplied in thousands. They form the natural food for carnivores like tigers and leopards and sustain the pyramid-like structure of wild life. Corbett is also the home of hundreds of species of birds. The migratory ones come there from far off places to spend the winter.

The Corbett National Park is well protected but encroachments and poachings cannot be stopped altogether. The migrant settlers or its periphery are an audacious lot. Thousands of them have illegally taken over large tracts of the forest land for cultivation and dwelling. In the last ten years their population has grown at an alarming pace and they cannot be evicted unless their impossible terms for resettlement are conceded by the Government. The continuing stalemate has proved determental to conservation measures at Corbett. No national park is safe so long as unscrupulous people live in its vicinity. Their presence cuts at the root of conservation because they cannot always be stopped from damaging the forest and its wild-life. Perhaps some drastic action is needed to remove encroachments from the Park area and the sooner it is done the better.

Despite the menace, the Corbett management does not visualise any great threat to the Park's wild-life from poachers. A leopard or a tiger skin might still fetch a fabulous price in the international market but the danger of a most stringent prosecution under the Wild Life Protection Act is always a deterrent to illegal hunting.

One leaves Corbett with the impression that animals are agreeable friends. They ask no questions, they pass no criticisms. □

Union budget - a new thrust to economy !

Dr. Ram Vichar Sinha

The Union budget for 1985-86 is claimed to be growth-oriented and has a pragmatic and realistic approach with preponderance of Indian agriculture having rural base. The author, however, says rise in prices of some of the widely consumed goods like petrol, diesel, cooking gas, vegetable oil, cold drinks, cement, cigarette and pan massala through indirect taxes may turn out to be inflationary unless economic measures are maintained stringently, efficiently and rigorously. The budget, by and large, is rational to the current problems in the country, though there is nothing unmixed in the world.

THE TOTAL RECEIPTS in 1985-86 budget have been estimated at Rs. 47,635 crores. The gross tax revenue at existing levels of taxation is estimated at Rs. 25,514 crores compared to Rs. 23,702 crores in 1984-85. The states' share of taxes is estimated at Rs. 6592 crores against Rs. 5777 crores in 1984-85, representing an increase of Rs. 815 crores. Receipts from the market loans are placed at Rs. 5100 crores against Rs. 4100 crores in 1984-85. Small savings collections are estimated at Rs. 3900 crores against Rs. 3300 crores in 1984-85. The total expenditure is placed at Rs. 51,295 crores, leaving a record uncovered deficit of Rs. 3349 crores. The taxation measures proposed in the budget are estimated to yield a net additional revenue of Rs. 311 crores to the Centre and Rs. 132 crores to the states. The deficit of Rs. 3349 crores is regarded as reasonable as it is lower than that in 1984-85 according to the Finance Minister.

The Budget for 1985-86 presented to the Parliament by Union Finance Minister, lays stress on generation of more employment opportunities particularly in rural areas, improving the lot of the poorest sections and accelerating the industrial growth. Priority has been accorded to rural development, generation of power and construction of gas pipe lines.

In order to economise the size of this paper and the time, I simply mention the revenue receipts by presenting 'Budget at a Glance' which is given in next page without going into their details.

Promises kept

The new Government headed by Shri Rajiv Gandhi has kept its promises as enshrined in the election manifesto. It has really moved boldly to usher in an era of greater social justice. There are imaginatively rationalised fiscal measures in the budget to give substantial relief to almost all categories of tax payers—individual and corporate. I shall later on substantiate this conclusion by delineating the economic measures and policies adopted in budget proposals.

The net effect of the proposals is to reduce the rate of increase in plan expenditure from 25 per cent during 1984-85 to less than seven per cent next year and leave a budget deficit of over only Rs. 300 crores uncovered. The wideranging incentives that the Finance Minister has provided to stimulate savings and investment, to promote technological innovation in industry through selective cuts or abolition of custom and excise duties specially on computers and other electronic products are widely welcomed. Dismantling plethora of controls and licences will

Table 1 : Budget at a glance

(In crores of Rupees)

	1984-85 Budget	1984-85 Revised	1985-86 Budget
Revenue Receipts			
Tax Revenue	23166	23702	25514 +431
Less. States' Share of Tax Revenue	5650	5777	6592 +120@
Net: Centre's Tax Revenue	17516	17925	18922 +311
Non-Tax Revenue	6490	7007	7851
Total · Centre's Revenue	24006	24932	26773 +311*
Capital Receipts			
Loan Recoveries	3905	3775	4003
Market Loans (Net)	4100	4100	5100
Small Savings (Net)	2400	3300	3900
External Loans (Net)	1793	1737	2144
Other Receipts (Net)	4559	4866	5715
Total - Capital Receipts	16757	17778	20862
Total Receipts	40763	42710	47635 +311*
Overall Deficit	1773	3985	3660 (—)311* 3349

	1984-85 Budget	1984-85 Revised	1985-86 Budget
Revenue Disbursements			
General Services	8306	8648	10896
Defence Services	6076	6407	6754
Social & Community Services	1677	1820	2421
Economic Services	5094	5918	5888
Grants-in-aid to States etc.	5189	5508	6759
Total Revenue Disbursements	26342	28301	32718
Revenue Surplus+ Deficit—	(—)2336	(—)3369	(—)5945 + 311
Capital Disbursements			
General Services	337	547	679
Defence Services	724	768	932
Social & Community Services	322	354	372
Economic Services	4921	6093	6052
Loans and Advances	9890	10632	10542
Total - Capital Disbursements	16194	18394	18577
Total Disbursements	42536	46695	51295

*Effect of Budget proposals.

@Excludes Rs. 12 crores accruing to States on account of Stamp duties

enable the private enterprises to make up the possible slack in public sector.

Exemption in direct taxes

The strikingly well-knit structure of reforms in the personal taxation is, by any reckoning, significantly impressive. The abolition of surcharge on income tax, lowering the effective tax rate in the highest bracket from 61.87 per cent to 50 per cent, reducing the number of slabs from nine to just four and raising the exemption limit from Rs. 15,000 to Rs. 18,000 a year will go a long way in revamping the economy of the country. The tax structure has vastly simplified at one stroke Thus mostly one million out of four million tax payers will be out of the tax net altogether. Estate duty, the yield of which was hardly worth the cost of collection has been rightly done away with leading to the higher saving and investment oriented budgetary provision. The following table will vividly present the position of personal taxes.

Table 2
Taxation of Personal Income

Income slab	Existing rates	Income slab	Proposed rates
Upto Rs. 15,000	Nil	Upto Rs. 18,000	Nil
Rs. 15,001—20,000	20%	Rs. 18,001—25,000	25%
Rs. 20,001—25,000	25%	Rs. 25,001— 0,000	30%
Rs. 25,001—30,000	30%	Rs 50,001—1,00,000	40%
Rs. 30,001—40,000	35%	Rs. Over Rs. 1,00,000	50%
Rs. 40,001—50,000	40%		
Rs. 50,001—70,000	45%		
Rs. 70,001—1,00,000	50%		
Over Rs. 1,00,000	55%		

Really speaking, the decision to permit donations by companies to political parties would also go a long way towards eradicating both political corruption and plugging the main source of black money. Similarly the deft changes in the legislation relating to corporate tax, wealth tax and the payment of minimum bonus will likewise stimulate savings and investment.

With the adoption of the new rate schedule, the tax relief will be 50 per cent of the income at current rates on a taxable income of Rs. 22,000. The surcharge on income tax in the case of non-corporate tax payers has been discontinued. With these modifications, the maximum marginal rate of income-tax on personal income will come down from 61.87 per cent to 50 per cent. The loss of revenue will be Rs. 200 crores on account of income-tax and Rs. 197 crores on account of surcharge which has been abolished in the budget. Similarly the compulsory deposit scheme stands abolished from 1st April, 1985.

Relief in excise duty

The exemption from special excise duty on 100 items is a welcome measure that will ease the life of the consumers, due to lower prices. Abolition of licences for radio and TV sets and no excise duty on Black and White T.V. sets are some of the landmarks of the budget. Advanced type of computers have been exempted from custom duty and of course all this will popularise the media of communication having educative value. Wealth-tax slabs have been broadened considerably and the maximum rate has been cut from five per cent to two per cent with a consolidated exemption of Rs. 5 lakhs. This will decidedly be a major incentive for tax payers to pay their dues.

Crop insurance and social security schemes

The comprehensive crop insurance with a built-in-cover for all crop loans upto 150 per cent of the loan is a progressive step. The marginal and small farmers will be subsidised to the extent of 2|3 of the insurance charges by the Central and State Governments on a matching basis A social security scheme is introduced to cover the risk of death by accident in respect of earning members of the poor families comprising landless labourers, small and marginal farmers and traditional craftsmen and artisans. Under the scheme, Rs. 3000 will be paid to the dependent of the deceased who dies as a result of accident.

The Finance Minister has proposed to notify a list of twenty five industries for de-licensing so that "Procedural delays are cut to a minimum in areas where we want additional capacity". Of course these steps will augment the productive processes with the increase of income of the people and hence they are of great value and significance.

A better climate for investment

In order to improve the market availability of convertible debentures of non-MRTP and non-FERA Companies, the Finance Minister has proposed raising of maximum interest payable on them from 13.5 per cent to 15 per cent. Naturally, this scheme will attract a broader section of investors to smaller companies and hence is admirable in the context of present economy of the country.

Sectoral allocations

With regard to Plan outlay, a sum of Rs. 800 crores have been sanctioned for implementation under the Rural Landless Employment Guarantee Programme. Family Welfare Programme with an outlay of Rs. 500 crores emphasising imaginative Family Planning Programme on voluntary basis to achieve a net reproduction rate of unity by the year 2000 A.D. is surely a pragmative move.

Keeping in view, the potential of Indian science and technology for modernisation and development, an outlay of Rs. 1,086 crores for development of Atomic Energy, Space, Ocean Development and Electronics has been earmarked. This is appreciably pragmative in view of the internationally competitive interplays.

The present ceiling of Rs. 1500 per month on pension is being removed and the ceiling on death-cum-retirement gratuity is being increased from Rs 36,000 to Rs. 50,000. With an eye to inflationary pressure such increases are justified on economic and human consideration of rationalisation. There is a big relief in custom and excise duties to the tune of Rs 385 crores in the budget.

Reactions

For the various industrial associations, the budget is said to be, by and large, dynamic, growth and production-oriented and it holds the promise of taking the country towards economic development and well-being. But the opposition party leaders and some economists like Dr. Amiya Bagchi, a Member of West Bengal Planning Board are critical of the Budget and describe it as "anti-people", "elitist" "inflationary" and "pro-middle class and rich people".

The Union Labour Minister T. Anjiah described the budget as a "great boon" for the working class. With the raising of the national ceiling of Rs. 750 to Rs. 1600 for computation of borus.

I as a dispassionate student of economics cannot but express boldly that the opposition party members while criticising the budget are not without prejudices. In fine, the budget is growth-oriented and has a pragmatic and realistic approach with regard to

Indian Agricultural preponderance having rural base.

No doubt, the budget has undertaken a fundamental reforms of income and other direct taxes including lowering of the marginal rates which will at last make honesty a practical proposition. In plain words, the budget can be said to be innovative, bold and invigorating. Yet there are some worrying features contained in it. This will be vivid from the fact that the Finance Minister emphasised "the process of pruning budgetary expenses at the Centre and the States, however, painful it might be. But contrary to his avowed mission, he has presented estimates showing a huge jump of 23 6 per cent in non-Plan expenditure for the Centre. The run-away increase in non-developmental expenditure will result in a heavy revenue deficit of Rs. 5634 crores next year. The record deficit financing of Rs. 3349 crores for 1985-86 will undoubtedly make non-sense of the Approach to Seventh Plan which assumed deficit financing to the tune of Rs. 10,000 crores in five years.

Shri K. K. Birla Group has rightly criticised the cement duty hike. According to cement industry circle, the decision is not well-conceived at least in the present situation and should not be appreciated. Even the modest tax effort of Rs. 431 crores mainly through indirect taxes will indeed raise the prices of some of the widely consumed goods like petrol, diesel, cooking gas, vegetable oils, cold drinks, cement, cigarette and Pan Massala.

In the field of excise duties, the budget provides for raising the basic excise duties on cement to Rs. 225 per metric tonne, paper and craft paper by Rs. 200 per tonne and stepping up of the excise on vegetable product to 10 per cent. The hike in these duties will raise the cost of living of the masses. Excise on paper is in a way tax on literacy which is ghastly lacking in India. A 15 per cent hike in petrol products prices may also affect the consumers.

The defence expenditure during 1985-86 has been put at Rs. 7688 crores which works out to Rs. 511 crores more than the revised budget estimates for the year 1984-85. There can be no two opinions on the justification of the increased expenditure on defence if we keep ourselves abreast to the external and internal situations.

Caution against inflation

However, there is no denying the fact that unless the economic measures are stringently, efficiently and vigorously maintained and sustained, there is every likelyhood, that inflation may raise its ugly head. Thus, by and large, the budget has a rational and realistic approach to the current problems in the country though there is nothing unmixed in the world. □

LIC business crosses Rs. 4169 crores

The Life Insurance Corporation of India introduced a new business of Rs. 4169.49 crores under 21,25,576 proposals in individual assurance business during the first eleven months of 1984-85 from April 1984 to February 1985, registering an increase of 20.7 per cent in sum propsed over that of the period of previous year.

The Southern Zone with an introduced business of Rs. 1307.77 crores and 7,11,322 proposals emerged on top, followed by the Western Zone with a business of Rs. 931.87 crores and 4,68,066 proposals. The Eastern, Central and Northern Zones introduced a new business of Rs. 689.42 crores, 642.62 crores and Rs 597.81 crores respectively. The number of proposals introduced by these Zones stood at 3,81,333, 3,08,365 and 2,56,490 respectively.

Amongst the Divisions of the Corporation, Bombay Division stood first with a sum proposed at Rs. 401.41 crores, followed by Calcutta and Delhi with sums proposed at Rs. 216 72 crores and Rs. 193.02 crores respectively

In respect of number of proposals, Bombay Division stood first having introduced 1,73,963 proposals, followed by Calcutta and Bangalore with 1,20,386 and 82,970 respectively.

Hyderabad Division has retained the highest growth rate in sum proposed with an increase of 43.5 per cent over that of last year for the corresponding period, followed by Ahmedabad and Indore Divisions with percentage increase of 38 5 and 38 3 respectively.

Mobile Planetarium in Maharashtra

Nehru Centre in Bombay has chalked out a programme to carry a planetarium at the door steps of the people of Maharashtra living in small towns or villages. For this purpose, the Centre has acquired a mini-planetarium capable of projecting nearly 1000 stars. It enables one to see the sky over the northern hemisphere at any place and at any time. Besides the stars, the details of the five planets visible to the naked eye can also be studied through this mini-planetarium.

The planetarium show is accompanied by films, slides and other exhibits to give the viewer a clear idea of the bright objects in the firmament above him.

It can be easily set up in schools and colleges. A hall, 15x20 feet is enough to put up the planetarium and upto 40 persons can watch the projections at a time.

This mini-devise costs only Rs. 85,000. Its dome is collapsible and can be carried from place to place, folded, in any wheeled conveyance. □

Irrigation for development

Gokul Prasad

In the Approach Paper to the Seventh Five Year Plan, emphasis has been laid on accelerated rate of agriculture development and self-sufficiency in foodgrains and edible oils. A massive programme of irrigation development will also have to be undertaken. All unfinished irrigation projects should be taken up for completion and adequately funded on a priority basis. New ventures should be restricted to medium irrigation projects in drought prone, tribal and backward areas, as well as minor irrigation schemes.

INDIA IS PRIMARILY an agricultural country. From times immemorial, our people have depended on agriculture. Fortunately the country is endowed with vast land and water resources. India has a total geographical area of 328.78 million hectares out of which 185.79 million hectares is cultivable. This is only 57% of the total area. The surface water resources of India are as much as that of U.S.A., although the geographical area of United States is about two and a half times that of India. But we have been able to utilise only 46% of these resources. Almost the entire amount of natural water is available during the four monsoon months. Therefore, surplus water has to be stored to make it available for the remaining 8 months. This can only be possible by construction of huge storages and other irrigation works. That is why so many massive dams with big reservoirs like Bhakra and Hirakud were built up.

Pressure on land

With an increasing population, there has been constant pressure on land. The only solution is multiple cropping and higher yields. As a result, our food production, which was only 53.5 million tonnes at the time of Independence, almost increased three-fold and during 1983-84 it has reached 150.6 million tonnes.

The Seventh Plan target for food production is about 190 million tonnes.

Better utilisation

For proper utilisation of water resources, the Government has adopted a number of major, medium and minor irrigation projects. A project which irrigates more than 10,000 hectares is called a major irrigation project, while a medium project irrigates between 2000 to 10,000 hectares. Projects irrigating smaller areas are called minor irrigation projects.

According to the broad assessment, it is estimated that 113.5 million hectares would be ultimately irrigated on full development of our irrigation potential. The total potential is, however, likely to increase further by another 25 million hectares through a national perspective of water resources development formulated by the Union Ministry of Irrigation and the Central Water Commission. The policy of the Government is to develop the entire potential by the turn of the century.

Irrigation projects

By the end of the Sixth Plan, the Government would invest Rs. 24,300 crores on irrigation. The external assistance has been coming to irrigation sector from the World Bank and through its soft landing affiliate the International Development Association (IDA). The present assistance is now worth about $ 2370 million for major and medium projects alone. In addition, an additional $173 million has been given to the minor irrigation programme. On an average credit assistance at the rate of 300 million dollars is being negotiated per year. It is expected that external assistance of about 2500 million dollars would be available in the Seventh Plan in the Irrigation sector.

Presently as many as 31 ongoing projects are receiving assistance.

In the Approach Paper to the Seventh Five Year Plan, emphasis has been laid on accelerated rate of agriculture development and self-sufficiency in foodgrains and edible oils. A massive programme of irrigation development will also have to be undertaken. All unfinished irrigation projects should be taken up for completion and adequately funded on a priority basis. New ventures should be restricted to medium irrigation projects in drought prone, tribal and backward areas, as well as minor irrigation schemes. These should yield benefits either within the Seventh Plan or, in the early year of the next plan period.

Stabilising the output

In all major and medium irrigation projects highly water intensive crops should be discouraged. Equitable distribution of water should be ensured to farmers with holdings of different sizes. This will help in stabilising agrcultural output. In existing irrigated areas where salinity and waterlogging have resulted in good agricultural land going out of use, adequate drainage facilities should be provided on a priority basis. Reclamation and revised cropping pattern should also be encouraged for preventing water-logging and salinity.

It appears that the spill-over cost of ongoing major and medium projects alone is likely to be over 25,000 crore rupees. The projects, withich are ongoing since the Fifth Plan and even earlier have to receive due priority for completion. The final outlay will- however, depend on the resources to be mobilised by various State Governments as well as the Centre. □

(Courtesy : All India Radio)

Physical performance of State transports

OVER THE YEARS, a steady pattern of improvement in the State Transport Undertakings despite severe resource constraints has been evident. In a five year period, from 1976-77 to 1981-82, State Transport Undertakings in India increased their fleet from 56,000 to 74,000 vehicles. During the same period, the select performance indicators clearly showed a steady improvement in physical performance. Fleet utilisation went up from 79 per cent to 84 per cent for all State Transport Undertakings put together. Vehicle utilisation went up from 240 kms to 261 kms per day. Fuel efficiency and tyre performance have also risen appreciably. Considering that this imporvement is for nearly three quarters of a lakh vehicles, it is no mean achievement. Some studies have shown that the performance of our State Transport Undertakings have kept their buses moving world.

Before taxes, State Transport Undertakings made an aggregate profit of Rs. 19 crore in 1982-83. The rising costs imposed on State Transport Undertakings coupled with low fare structures have resulted in larger losses being recorded in the books of the State Transport Undertakings. Despite all this, State Transport Undertakings have kept their buses moving over larger and larger distances in an effort to meet the needs of an ever-growing number of commuters

The State Transport Undertakings deserve a more sympathetic treatment because of the heavy social obligations of catering to weaker sections of the society imposed on them. □

Central scheme for implementation of minimum wages

THE CENTRE HAS EVOLVED on a pilot basis a Centrally sponsored schemes for assisting the States in securing effective enforcement of minimum wages for agriculture workers. The objective is to strengthen the implementation machinery of the States in this regard. Initially the scheme would be extended to four States of Madhya Pradesh, Rajashthan, Orissa and Manipur. A provision of Rs. 30 lakh has been made in the Annual Plan for 1985-86 for this scheme.

The Centrally sponsored scheme for honorary rural organisers would continue in the Seventh Five Year Plan and it is proposed to extend its scope in 1985-86 by covering 500 more blocks. Awareness camps were being planned to make the scheme a success.

The Union Ministry of Labour felt that for some industries there should be special laws and such special laws were being processed for building and construction industry and brick kiln industry. Tripartite groups to go into the problem of handloom, powerloom, leather, fishermen were formed and their reports would help the Ministry in framing special laws for these sectors. An ILO mission would visit this country shortly to help in the project of organisation of beedi co-operative societies.

The National Rural Employment Programme (NREP), the Rural Landless Employment Gaurantee Programme (RLEGP), the Integrated Rural Development Programme (IRDP), the Programme for Training of Rural Youth for Self-Employment (TRYSEM) were of crucial importance creating employment in the rural areas and also building up durable assets and infrastructure in the villages. These programmes push up wages in the rural areas thereby making the enforcement of the Minimum Wages Act easier. These programmes also help in checking to some extent the migration of labour to the urban areas which creates a host of problems.

BOOKS

Poverty versus affluence

A Manager's View of India's Problems by M. Srinivasan. Published by Affiliated East-West Press Pvt. Ltd., 104—Nirmal Tower, 23 Barakhamba Road, New Delhi-110001. First published : 1984. Pages 162, Price not mentioned.

This Book contains, by way of small comments, description of position in areas like agriculture, industry, education, planning, science and technology, population, health and so on with special reference to India. With his abundant experience, spanning over the service period as a technocrat manager, the author gives us a density of ideas and impressions that he possessed on Indian and world scene. The author's approach is realistic, not cynical as is usually the position in such cases. To him, India is deplorably poor, not because the country lacks resources or it is short of people with brains and skills, but only because the country and its resources are very poorly managed, and leaders are fighting among themselves for crumbs of power and authority, and ignore the real interests of the millions of the poorest of the poor.

On the world scene the author comments that people in advanced countries believed that increase in material wealth would necessarily lead to increase in human happiness and personal fulfilment, but experience is pointing to the contrary. "It is possible for the affluent nations to meet the claims of the Third World without too much sacrifice on their part. The demand for a new international economic order is a historical process which can be achieved in course of time". Another interesting remark made is that the interests of the affluent and poor nations should be balanced, and the rich countries should weigh the cost of absorption against the cost of conflict.

In the chapter on 'Indian Drama', the author touches upon a number of issues of which 'corruption' is one. Says he, "Politics is the fountainhead of all corruption in India. If the political system and elections continue as they are, corruption will persist". But then, he does not spell out the viable alternatives. On the issue of planning, the author puts his finger at the right place by saying that it is no use increasing the GNP by producing goods of no relevance to the country's needs. If the GNP has to be effective, it has to consist of items which are needed for mass consumption.

A very important observation made by the author is that the structure of governmental agencies viz., ministries, administrative machinery and executive agencies, has not changed much since Independence. "It was not realised that administration does not function in a vacuum, and social conditions and the aspiration of the people have to be taken into account. Hardly anything was done to bring about a radical change in the motivation and attitudes of employees. .... The main preoccupation of the goverment continued to be the maintenance of law and order and collection of revenue and taxes". This is a controversal observation and perhaps, today, more than ever, we need to have a national debate on this subject.

Navin Chandra Joshi

Analysis of taxation

The Economics of Taxation, by by Simon James & Christoper Nobes; Phblished by Heritage Publishers 1984. 4C Ansari ..Road, Daryaganj, New Delhie-110002. Pages 318, Price Rs. 160.

Two facultry members or reputed of reputed institutions abroad have written this book which amplifies the rudiments to the economic theory of taxation, together with a description and discussion of different taxes. Part one of the book deals with analysis and classification of taxes.

At a time when the debate on the efficacy of introducing expenditure tax is still in an amorphous stage in India, he authors advert to the "double taxation of savings" by an income tax. An income tax is imposed on both the income when it is first received and any interest paid when the income is saved. A tax on expenditure, on the other hand, only taxes the savings once—when they are spent. An expenditure tax, therefore, allows a more favourable return to saving, as interest can be received on the gross amount of any income saved. Perhaps, Indian tax planners and fiscal wizards can take a clue from this book on this score and shape their fiscal tools accordingly. The authors opine that it is interesting to "speculate how far income tax is responsible for the modern trend towards self-sufficiency simply because it fails to tax income in kind". Examples of income in kind are legion and the system seems to be thriving. For example, nearly all forms of "do-it-yourself" chore fall into this category. If a man paints his own home, he does not pay income tax on his own services. Per contra, if he paid someone else to paint his house (or if he painted someone else's for cash) income tax is imposed on the transaction.

On the canon of equity for which all taxes profess to lay claim, the authors contend that the effects of inflation on equity cannot be brushed aside. Earned income fares reasonably well because of its current nature and because effort is put into correcting for inflation. Capital gains suffer increasingly high real rates in inflationary conditions. But calls for indexation of capital gains taxation look ludicruous unless there is also indexation of fixed interest securities which suffer even more under inflation.

Part II of the book deals mostly with a root-and-branch review of the different taxes of the

United Kingdom and the excessive preoccupation with taxes of the U.K. would definitely rob the charm of general readers who may not like to get bogged down in the maze of the network of the United Kingdom.

What emerges from this well-documented book is that the tax system as such is a powerful means of influencing the level of economic activity, should the government desire to deploy it prudently and with a view to obtaining maximum revenue with minimum of dislocation to different categories of tax payers.

While the contents and comprehensive coverage of taxation principles put forth in the book are doubtless an educative exercise, the prohibitively high cost of the book would definitely be a damper for aspiring readers who would like to get immersed and informed of taxation principles and practice. □

G. Srinivasan

A radical hardliner

Builders of Modern India-Bipin Chandra Pali : Saral Kumar Chatterjee, Publications Division, New Delhi P. 203 Rs. 20

Modern India by and large emanates from the large scale handwork of her great sons who joined the struggle for freedom to strengthen her political planks with pivots of deep-rooted social reformation and cultural renaissance. In other words these tools of endeavour were all the more necessary to root-out age-old social maladies, economic disparities, religious prejudices and educational handicaps to create a new consciousness which would pave the way for a lasting independence of the mother land towards the eventual goal of prosperity, peace and happinesss for all. Naturally this involved a long drawn out roll-call-of-honour consisting of versatile personages, like men of means, men of parts, men of letters, social scientists and dedicated workers.

Biographical writings under the "Builders of Modern India" series come next to the "Collected Works of Mahatma Gandhi". For their wider range of touching upon many a stalwart of national eminence, these writings acquire a significance of comparatively larger proportions destined to reach a readership which may be interested as much in the variety of great characters as in the singularity of certain lofty minds. And for posterity they are, nevertheless a treasure trove of archival import for all times to come.

Bipin Chandra Pal, as one of the invulnerable trio, comprising Bal, Pal and Lal, will doubtless go down in our history as a radical hardliner to all intents and purposes but with the difference of retiring from the mainstream of national politics, carving out a life of seclusion and loneliness without resorting to any of the wayward attitudes.

Consistent with his verstality he made "original contributions to many disciplines of human knowledge such as, social, political and speculative philosophy, literature and literary criticism, comparative religion, social history, autobiography and biographical sketches". The dictum, "Pen is mightier than sword" is perhaps verbatimly true in respect of Bipin Pal who left many hundred pages of writings and speeches in Bengal and English".

His role as a true Brahmo leader, his giving up lucrative teaching assignments, his visits to England, his extraordinary craftsmanship of penetrative oratory, his retirement from active politics without giving up its moral support, all go to the making of a great personality as unique as versatile.

Consequently, it is very difficult indeed to evaluate the activities and contributions of an eminent person of the status of Bipin Chandra Pal, so versatile, so colourful and yet, latterly, so controversial.

In deferrence to the avowed intent of he series, the author has followed a definite lay-out of exposition, commensurate with the social and political background of the luminary, the developmental phases of his personality, professional interludes of his career practical aspects of his political thinking and endeavour. He has endowed this very contour of his approach with chiselled and synoptical style of narrative and in he process has no doubt achieved unquestionable readability. □

R. P. Rahi

Rs. 200 crore Central assistance to drought affected States

The Minister of Agriculture and Rural Development, Shri Buta Singh told the Lok Sabha recently that the Centre had sanctioned assistance totalling Rs. 200.66 crores to the drought affected States.

Prior to sanctioning the aid the Central Government deputed teams to drought affected States of Andhra Pradesh, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Orissa. Rajasthan and Uttar Pradesh. These teams visited the drought affected areas, held discussions with the State Government officials and examined the memoranda received from the States.

The major components of the Central assistance for drought relief are supply of drinking water, nutrition programme as well as provision for fodder for cattle, employment generation, gratuitous relief, input assistance to small and marginal farmers, etc. About Rs. 54.00 crores has been sanctioned for drinking water and Rs. 7.42 crores for fodder as parts of the Central assistance to drought relief during 1984-85. The Central government also assists the States under the Accelerated Rural Water Supply and Incentive Schemes. During 1984-85, the Government of India gave assistance of about Rs. 154 crores to these eight States under these schemes,

Helping small scale industry grow

THE CENTRAL GOVERNMENT has taken policy measures for promotion of small scale industries, creation of more employment opportunities, and technology upgradation including modernisation during the Seventh Plan.

For the first time, the Budget proposals for 1985-86 have incorporated the principle of graduation and incremental approach in the levy of excise duty for small scale undertakings.

The upper ceiling of concessional rate of duty under the General Exemption Scheme has been increased from Rs. 25 lakh to Rs. 40 lakh with the provision that these benefits will continue to be available to small manufactures whose value of clearances of all exciseable goods under the tariff during the preceding year did not exceed Rs. 75 lakh. Similarly, the upper ceiling for items covered under Central Excise Tariff 68 has also been raised from Rs. 30 lakh to Rs. 40 lakh providing the same benefit of concessions up to the clearance of Rs. 75 lakh.

The investment limit in plant and machinery with regard to small scale undertakings has been increased from Rs. 20 lakh to Rs. 35 lakh and for small scale ancillary undertakings from Rs. 25 lakh to Rs. 45 lakh.

The new Import-Export Policy which is valid for three years will facilitate increased production through easier and quicker access to inputs required to be imported by the industrial sector as a whole for self-sustaining growth in the country. Under the policy, as many as 301 items of industrial machinery have been placed under open general licence (OGL) which should inter alia benefit the small scale undertakings.

The growth of small scale sector achieved a compound rate of growth of 9.4 per cent at 1979-80 prices during the Sixth Plan period against the target of 8.7 per cent. It had been surpassing the targets from year to year both in respect of production and employment.

During the Seventh Five Year Plan period, this sector is likely to achieve a compound rate of growth of about 10 per cent in production, 6.3 per cent in employment and 12 per cent in exports.☐

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Incentives for environmental protection

THE CENTRAL GOVERNMENT has offered many incentives to enthusiastic public who desire to be involved in conservation and environmental protection. Such incentives have become necessary because the whole international community has expressed fears about the safety of man in the face of the present process of denudation of forests and pollution of air and water due to enormous increase in the industrial establishments in the country.

The Government has decided that the amount paid by a tax payer to any association or institutions for programmes of conservation of natural resources will be allowed as deduction in the computation of taxable income. The amendment to this effect has already been made in the Income Tax Act, 1961.

A depreciation allowance at 10 per cent is allowed on devices and systems installed by industrial units for minimising environmental pollution or for conservation of natural resources. A list of such devices and systems eligible for accelerated depreciation has already been notified by the Ministry of Finance.

Another incentive available is the grant of investment allowance at a higher rate of 35 per cent as against the general rate of 25 per cent of the actual cost of new machinery or plant which would assist in control of pollution or protection of environment. But such machinery or plant should have been notified by the Centre for the purpose of the said provision. An addition to this effect has already been made in the Income Tax Act.

Tax exemptions have also been provided to encourage industries to shift from urban areas as a measure of decongesting the overcrowded cities and for reducing pollution. Capital gains arising from transfer of buildings or land use for the purpose of business are exempt from tax if these are used for acquiring lands or constructing buildings for the purpose of business at the new place. This exemption is also applicable to capital gains arising from transfer of machinery and plant.

Any person or local authority is entitled to a rebate at the rate of 70 per cent of the actual cess on water on the installation of all pollution abatement device. But these devices must be run efficiently to the satisfaction of the State Water Pollution Control Boards.

Income Tax Act, 1961 also provides for 100 per cent deduction of the amount paid by a tax payer carrying on business or profession to any association or institution which has as its object the undertaking of programmes of conservation of natural resources to be used for such programmes. The deduction under this provision will not be allowed unless such association or institutions or such programmes have been approved by the "prescribed authority", i.e. Secretary, Deptt. of Environment, New Delhi.

Procedure has been laid down for purpose of approval of programmes for the conservation of natural resources and environmental protection under the provisions of the Income Tax Act, 1961. This procedure would remain in force until further orders.□

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More on 'testing voluntary agencies'

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yojana

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Our farm universities

NEXT ISSUE

Focus on planning and energy

Agricultural production on the rise

INDIA ACHIEVED IN the last 35 years a three-fold increase in food production which rose from 51 million tonnes in 1951 to about 150 million tonnes in 1983-84. This remarkable increase was brought about by harnessing technology and transferring it from laboratories and research stations to the farmers.

Apart from technology, success on the agricultural front had been due to timely and adequate supply of basic inputs like seeds, fertilizers, pesticides, machinery, irrigation and credit.

The increase in agricultural production in the recent past was also attributable to judicious administration of pricing policy. Between 1979-80 and 1984-85, the procurement price of paddy was increased by 44 2 per cent and that of wheat by 34.2 per cent.

The main thrust in agricultural production was confined only to irrigated areas till recently. About 30 per cent of the gross cropped area was under assured irrigation and contributed about 55 per cent of the total agricultural production. The rest was under rainfed cultivation contributing about 45 per cent of the total agricultural production.

The Government has now given an important place to dryland farming and suitable technologies, seeds and agricultural practices are being evolved for areas under dryland farming.

During the Seventh Plan, the emphasis would be on improving production and productivity of dryland farming areas, in particular, pulses and oilseeds which were critical for food security.□

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Yojana, November 1984 Special was on the theme "Testing voluntary agencies". The issue was received well in the interested quarters and generated lot of discussion on the subject. The Deendayal Research Institute, New Delhi recently organised a 3-day workshop on "Strengthening the movement for constructive work in India". The participants included eminent thinkers and social workers engaged in voluntary action movement—Nirmala Deshpande, S.K. Dey, Sushila Nayar, Bunker Roy, Nana Deshmukh and Tarlok Singh.

We, at the Yojana, were furnished with a copy of the conclusions and suggestions emerging at the workshop. Here we reproduce the conclusions of the workshop along with a commentary (a) on the conclusions as such done by Prof. Kabra and (b) on the commentary done by Shri S.K. Dey.

We hope our readers would enjoy the interesting debate on voluntarism.

TESTING VOLUNTARY AGENCIES

They help strengthen constructive work !

The workshop on strengthening the Movement is of the view that the community as a whole would benefit if voluntary organisations were given a fully accepted role of partnership in planning and implementation. The workshop feels that the voluntary agencies have inherent capacity to organise the weaker sections, defend their just rights and counter exploitation. They can make a positive contribution as watchdogs of public interest close to the community. In addition, they have unique opportunities of undertaking innovative experiments and create models of development. However, the workshop also thinks these agencies should also accept obligations and discipline in their working.

NOTWITHSTANDING MATERIAL ADVANCE n several directions, India faces today many serious and urgent unsolved problems. These include, for instance, widespread and deep-rooted poverty, under-employment and unemployment; women's illiteracy and burdens and handicaps suffered by women malnutrition and illhealth among young children; increase in the rural proletariat and in the numbers of those below the poverty line, including landless workers, tenants and sharecroppers, marginal farmers and rural artisans; waste of human resource and under-utilisation of manpower; inability to meet the basic needs, including drinking water and fuel, of a large section of the people; one-way movement of rural youth towards urban centres; and marked degradation of the environment in several parts of the country. Under these conditions, in addition to the agencies of the Central and State Governments and local authorities, it has become essential to strengthen and develop all the sources of voluntary action and community mobilisation available in the country. In particular, it is necessary to create the environment in which, instead of depending unduly on the Government, the people in each area, at the community level and through voluntary action, will develop the will and the capacity increasingly to solve their own problems as self-reliant citizens and build up their resources and potential.

Need for a nation-wide movement for constructive work

Voluntary organisations, working without distincrent capacity to orgainse the weaker sections of the have demonstrated all over the country their inherent capacity to organise the weaker sections of the people, defend their just rights and counter exploitation ensure improved delivery of services to beneficiaries, and enlarge local effort. There are also numerous examples of successful innovation and application of science and technology in the use of local resources and in serving the rural poor. Given due support, voluntary work can take root everywhere, thereby drawing on vast and currently untapped or underutilised resources of initiative and leadership, Vol-

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untary organisations working in the long established tradition of Gandhian values and many others which have come into existence since Independence and have often opened up new avenues of social service, together provide a strong base for the steady growth of a broad-based nation-wide movement for voluntary work. It snould be the common and agreed endeavour of all to strengthen this movement as a necessary foundation for an equal, classless and casteless democratic and secular society.

Role of voluntary action

Poverty eradication and rural development

Over the past decade, major programmes have been initiated by the Central and State Governments for alleviating mass poverty, expanding employment opportunities, assuring minimum needs to increasing numbers, strengthening the rural economy, raising levels of productivity and welfare of scheduled tribes and scheduled castes and other backward classes, extending community services and combating a variety of soial and economic failures. These and similar activities will doubtless be further expanded as part of the Seventh Plan. In many areas budgetary resources will be substantially supported by credit from banks and financial institutions. Whatever the scale on which they are undertaken the practical impact of all these programmes on the life of the people will naturally depend on the quality of management on ensuring that benefits reach out fully to those for whom they are intended, on avoidance of waste and corruption, and on open and equitable distribution of assets and resources. As watchdogs of the public interest close to the community, alongside government agencies, voluntary organisations can make a positive contribution. They can also play a significant role in organising the rural poor for their own benefit. Therefore, the community will gain if they are given a fully accepted role of partnership in planning and implementation at appropriate levels.

Protecting the environment

In hilly and mountainous regions and in tribal areas, under pressure of increasing numbers, deforestation, soil erosion and environmental degradation generally have assumed serious proportions and further accentuated the earlier problems of poverty and deprivation. There is urgent need in such areas to save and regenerate the environment through effective conservation of soil and water, social forestry and development of alternative energy resources. These are essential areas of activity in which grassroot voluntary organisations can do much to make the people aware of the dangers ahead, enlist their co-operation and participation and help achieve a combination of physical with socio-economic planning within each area or sub-area. Voluntary agencies have also to play a key role in monitoring and vigilance and help ensure that no damage is done to primary resources as a consequence of uncontrolled and unregulated industrial development.

National commitments

There are a number of critical national goals to which the country has committed itself without, however, being yet assured that they will indeed be fulfilled. They include, for instance, provision of universal elementary education, including eradication of illiteracy among women; control over population growth, health care for all; provision of minimum needs for all; work for all; unquestioned security of tenure and rights of ownership for cultivators; assured minimum wages in accordance with the law; reduction of regional disparities and accelerated development of backward areas; rapid progress towards a just and equal society and ending of all social and economic exploitation, bringing scheduled tribes and scheduled castes and other backward classes to the level of the rest of the nation; and adequate services for women and children. Besides these, there are other commitments which must soon follow, for instance, planned development of literate rural youth as a major human resource, with its far-reaching implication for the future design of rural transformation and regional and area planning. All these major national goals leave no choice but to harness the entire energy and resources of the people of India, to bring the nation as a whole into action to achieve a new social order which will assure the welfare of all equally with the welfare of the least. For an undertaking of such magnitude, side by side with Governments at the Centre and in the States and the institutions of local democracy and Panchayati Raj, voluntary organisations are also under obligation to prepare and equip themselves in a more basic sense than before.

Models of development and innovation experimentation.—Voluntary agencies have unique opportunities of undertaking innovative experiments and creating models of development which will be of the greatest value for further development and for national and state planning. Already, in the work being carried out by voluntary agencies all over the country, there are important examples and directions in which other voluntary agencies and Central and State planners and others have considerable interest. Such pioneering and pilot efforts need to be carefully assessed and widely known and experience exchanged. In this way, better designed action projects at the grassroots can be developed by voluntary agencies in their respective areas and fields of interest. These latter will include, for instance, integrated rural development, generation of employment, action against poverty, intensification of agriculture, dry farming and soil and water conservation, social forestry, development and rehabilitation of rural artisans education and eradication of illiteracy, health care and nutrition, development of rural youth, social welfare services for women and children and many other activities essential for raising the level of productivity developing human resources and

rebuilding the life of the rural community.

Women and youth

Women and youth hold the key to the future, equally in the movement for constructive work, as in other fields of endeavour. The tasks in view can only be accomplished as women come to participate as equal partners in every facet of development and become major agents of change. Likewise, the greater responsibilities, opportunities and challenges in voluntary work, as elsewhere, most belong to youth. Larger representation of women and youth in all community institutions follows necessarily from their role in building the future.

Cadres in voluntary work

In comparison with the past, recent developments have opened up a new range of promising fields of activity for voluntary organisations. In addition to the qualities of social leadership and sense of identity with the interests and needs of the people, there is need now for new skills, for more specialised and technical knowledge, and capacity to motivate sustained efforts on the part of groups and individuals. Therefore, the most critical task for the movement of constructive voluntary work as a whole is to begin to plan for its own cadres, including their training and development.

These matters will receive full study as the scope for voluntary action in the context of national planning emerges more clearly. In the view of the Workshop, the better equipped voluntary organisations may well be in a position to institute training arrangements on their own or in co-operation with other organisations. These may be mainly at the field level or in practical work. They may also be able to assist in training personnel from smaller organisations. There should be scope for voluntary organisations to draw upon training resources and facilities available in agricultural and other universities, in institutes of techology and management, in regional institutions, in the National and State Institutes of Rural Development, in co-operative training institutions and other centres. As an integral part of manpower planning, for certain categories of personnel, the requirements of Government agencies and of voluntary organisations would increasingly need to be viewed together. Over a long view, a measure of interchangeability should also be envisaged among personnel working in Government agencies and in constructive work organisations.

Co-operation in constructive work

By the nature of their evolution, voluntary organisations have tendered to function as distinct entities, each concerned mainly with its own problems and opportunities. There has thus been too little contact even between organisations in similar areas of work and too little opportunity to learn from one another. There is obvious need now to develop greater interchange of information and experience between organisations engaged in constructive work in different states and across the country as a whole. In turn, such information and experience have to be shared and disseminated widely and followed up through direct contacts between workers and communities.

As a first step in building up a system of co-operation among voluntary organisations and for co-operative study of their common problems and needs participants in the New Delhi Workshop have agreed to continue to serve as a Follow-up Group on Constructive Work. A number of voluntary organisations in different parts of the country will be requested to become members of the Follow-up Group. Through mutual consultation, a National Forum for Co-operation in Constructive Work might be expected to emerge before long. The National Forum could hope, in due course, to project the needs and possibilities of constructive work organisations at the level of national policy and planning. While voluntary organisations, irrespective of their size or activity, would necessarily continue their work in their own way, they would, at the same time, endeavour to build up their collective strength and resources and give mutual support to one another.

Co-operation with universities and academic institutions

In its universities with their social science and other facilities (including many Departments devoted to Rural Studies), agricultural universities, institutes of technology, institutes of management and other academic institutions and centres, India is uniquely rich in possessing knowledge and talent directly significant for the grassroots activities of voluntary organisations. Growing numbers of scholars in these institutions are already turning to the study of problems which lie close to the people and their well-being. The concept of research is being steadily broadened to include action-research. Therefore, development of close working links between higher academic institutions and voluntary organisations in different regions becomes a highly promising area of co-operation which will benefit both. These links may be expected to facilitate objective assessment as well as innovative experimentation and will doubtless stimulate the interchange of information and experience on a wider scale.

Resources and planning

It is believed that, in the context of the Seventh Plan, consideration is being currently given to the question of resources to enable voluntary organisations to take their due share in national development. In the past there has been high degree of dependence on the part of many voluntary organisation on foreign funds. It is indeed essential that funds from foreign resources, to the extent they are drawn upon, should be channelled to voluntary organisations only through appropriate Government channels. Lack of funds from national sources has proved to be a severe con-

straint on the growth of voluntary action in India. Moreover, a limited 'project' approach, commonly adopted in funding, has impeded long term development by voluntary agencies in terms of local needs and potentials and the efforts of local communities.

The main strength of voluntary organisations lies in their capacity to mobilise local resources, manpower and leadership, and to improvise and experiment in given environments. Voluntary organisations need technical help. Therefore, it is necessary that all Government institutions and agencies, at the Centre or in the States, should look upon the needs of voluntary organisations as falling within their area of technical concern and guidance.

Equally, with technical support, voluntary organisations require financial support, directly for undertaking activities assigned to them, and indirectly for equiping themselves with the requisite competence to build up local long-term potentials. The desired approach was clearly indicated in the Report of the Planning Commission's own Expert Group on Programmes for Alleviation of Poverty, which had Professor M. S. Swaminathan as Chairman. To quote from the Report submitted by the Group in February 1982.

> "The Plan provides extensive resources for all aspects of development. These are currently utilised almost entirely through government departments and their agencies. Only a negligible fraction of these resources becomes available to voluntary agencies. Yet, the resources which could go a long way to sustain and expand voluntary effort for rural development in fact subsist within the existing Central and State Plans. One of the main reasons why they do not become available to any extent even to well-established voluntary agencies is that the schemes in different areas of development are designed for implementation entirely or almost entirely by government organisations and personnel. It should be emphasised that, in the very nature of rural development, in each field, there are activities of which some aspects or components could be assigned with advantage for implementation through competent voluntary agencies which might be already at work or whose formation and development could be encouraged. In designing each programme, therefore, the Planning Commission and the concerned Central Ministries and Departments in the State should make special effort to mark out those components and areas of action which can be 'passed on' with the necessary administrative and technical guidance and financial support, for implementation mainly by appropriate voluntary organisations. We recommend that the programmes bearing on agricultural and rural development which are currently in operation under the Sixth Plan should be looked at afresh from this angle by a working group comprising representatives of the Planning Commission, Ministry of Rural Reconstruction, Ministry of Agriculture and where necessary other Ministries that may be concerned."

It is to be hoped that the Planning Commission will find it possible to take early steps to constitute a working group on the basis envisaged by its expert group. Similar action would be helpful in other sectors, such as agriculture, education, health, social welfare, housing, rural water supply and rural industrialisation. The Follow-up Committee and the organisation which may eventually emerge for strengthening the movement for voluntary work will naturally wish to extend their fullest assistance in studies that may be instituted in relation to development in the Seventh Plan.

The better-off sections of society, including those engaged in Industry, Commerce and the Professions are in a position to contribute significant resources for voluntary work. It is possible that the concessions under section 35 CC (A) of the Income Tax Act, had in view the larger enterprises in society rather than all those, including medium and small business and professional persons, who are in a position to contribute financially, in building up resources for the voluntary sector. In the light of experience, a fresh study should now be made of effective ways of meeting any deficiencies that might have been encountered and more satisfactory rules and procedures evolved by the prescribed authority. As an example, where a project has been specifically approved by the prescribed authority, the concerned voluntary agency could apply for the allotment of funds contributed by a donor. The main consideration now should be that resources which might otherwise remain blocked should flow more freely and in larger amount for the development of the more backward regions and for programmes and activities in the interest of the poorer sections of the population. Such resources are a necessary supplement both to local resources and to those which can be provided from the Plan budget or by way of credit. If they are utilised according to well defined priorities and as part of planned effort, the tax reliefs needed will have justified themselves.

Participants in the Workshop fully appreciate that in seeking a positive role in planned development, voluntary agencies also accept many obligations in relation to their own functioning. This is an aspect to which further study is proposed to be given. □

Confused or camouflaged!

Kamal Nayan Kabra

Criticising the logic of the framework for community action, Prof. Kabra questions the validity of the thesis, "All these major national goals leave no choice but to harness the entire energy and resources of the people of India, to bring the nation as a whole into action to achieve a new social order which will, assure the welfare of all people equally with the welfare of the least", and asserts "in a society with sizeable weaker sections who are exploited and denied their just rights (of course, by a minority) the process of ensuring development and welfare has to focus differentially and with greater priority on the needs of the least well-placed".

AMONG FACTORS WHICH give rise to optimism in the midst of our acute national problem is the constant search for new answers which we see in diverse fields. The intense debate, becoming acrimonious in certain quarters, over the concept, rule, modus operandi and likely impact of voluntary agencies in rural development or development at grassroots level, is a part of the on-going search for a more relevant concept, more effective engine and more self-regenerating process of development. The conclusion and suggestions of the Workshop on Strengthening the Movement for Çonstructive Work in India (referred to as C&S subsequently) concerned mainly with the voluntary agencies (V.As.), may well be taken as a part of this ferment. To the dialogue on this issue, a substantial contribution was made by the Yojana special issue on 'Testing Voluntary Agencies'. The C&S by an eminent group of theorists, practitioners, activities and experienced planners and administrators may carry the emerging conserves to a higher plane.

The focus

The V.As., according to C&S are meant to address themselves to "many serious and urgent unsolved problems" which India faces today. The listing of such problems in the document covers a wide canvass. and avoids reference to discarded conventional wisdom like slow pace of GNP growth, relative slow-down of industrialisation, worsening capital output ratio, etc. These catch-all phrases and concepts and the primacy assigned to them in the past with faith in an excruciatingly slow, misdirected and non-democratic process of trickledown played no mean part in leaving us saddled with what the C&S call "urgent and unsolved problem". The C&S appear to be fully aware of our "national commitments" arising from our manifold failures which may in the final analysis be attributed to absence of "rapid progress towards a just and equal society and ending of all social and economic exploitation".

Welfare of the least

In the analysis of the framework for community action through V.As., there are some formulations which in my view need closer scrutiny. The C&S maintain that "All these major national goals leave no choice but to harness the entire energy and resources of the

people of India, to bring the nation as a whole into action to achieve a new social order which will assure the welfare of all people equally with the welfare of the least". It is not consistent to work for the welfare of all equally in order to improve the lot of "the least" (Antyodaya) when it is recognised that the V.As. "organise the weaker section of the people, defend their just rights and counter exploitation". In a society with sizeable weaker section who are exploited and denied their just rights (of course, by a minority) the process of ensuring development and welfare has to focus differentially and with greater priority on the needs of the least well-placed. It cannot be the welfare of all equally if it has to reach the lowest rungs.

Development has to be directed at structural change in relationship of power and control over and access to resources. The process of defending the just rights of the poor, ending their exploitation, granting "unquestioned security of tenure and rights of ownership to cultivators", scouring "work for all" and "provision of minimum wages", cannot assure "the welfare of all equally with the welfare of the least". Those who are keen on community effort and mobilisation and accept the defects and injustices ingrained in the existing order (arguing the need for "a new social orders") have to make clear choices. You cannot hunt with the hounds and run with the hares.

Beware of elitist traps !

Similarly, well-meaning efforts towards development by "self-reliant citizen" by participative, voluntary, community effort has to discard ethnocentricity, eventhough it may be tacit as e.g., when it is postulated that the scheduled tribes and castes and other backward classes have to be brought to the level of the "rest of the nation". For one thing, the rest of the nation vis-a-vis the identified weaker groups is at no homogeneous level. Second, it may not be much of development, particularly, self-reliant development when the sights are set on reaching some presumed level already attained by others. Just as nations with an imitative, mimetic perspective land themselves into mirages, similar fate awaits the will-the-wisp of disadvantaged social groups for 'development'. Voluntary efforts have to be at best catalytic agents to emergise the backward section's dormant articulation and mobilisation potential for development. It would be naive to believe that well-placed social groups by themselves can design, manufacture, pack, label and deliver development to others. A catalytic agent cannot be enlarged into larger than life role of becoming the main or major agent or engine of development. V.As. would do well to avoid elitist traps.

Various programmes suggested in the C&S can be quite unexceptional, especially because they are sought to be located in specific local conditions rather than remain mechanical replicas of national level, central schemes. However, the overall design of the programme for rural development to be undertaken by V.As. is sought to be derived from the official plans with accent on "the equality of management", on avoidance of waste and corruption, on open and equitable distribution of assets and resources, in brief, on delivery of benefit to the target group without leakages.

Why govt. help !

It is on this basis as also to wean away the V.As. from foreign funds that plea for governmental financial support for voluntary action is made by C&S. These agencies then would become based on local resources, plan resources as well as donations, which, through tax concessions, would ultimately come from the public exchequer. It is at this stage that in the name and under the rubric of voluntary action, something like non-governmental organisations (NGOs) for carrying out official programmes and projects seems to be emerging from C&S. Though it is suggested that V.As. have unique opportunities for innovations in creating modes of development worthy of emulation by national and State plans, when consideration is given to resources and programmes, a case is argued for the need to institutionalise the public funding mechanism for V.As., on the basis of some sort of accreditation process based on specific criteria. In their turn, V.As., seem ready to take-up "activities assigned to them" and officials seem ready to "mark out those components and areas of action which can be 'passed on' with the necessary administrative and technical guidance and financial support". These resources are to be supplemented by action research from academics and scholars and, donations from "the better off sections of society, including those in industry, commerce and professions" (of course, spurred and helped by appropriate concessions under the existing Income Tax Act and "an improved version of the relevant section in the Income Tax Act, as pleaded by a Votary of V.As. A case for encouraging voluntary organisation with resources and technical help seems to be the main theme in the dialogue of the workshop participants with the Planning Commission. Another important suggestion is to link up the V. As. in some sort of a national forum for building up their collective strength and for mutual support. It is also proposed to make the V.As. based on trained cadres and to bring about a measure of interchangeability among government personnel and the trained cadres in constructive work organisations.

Before analysing C & S, it may be pointed out that development, particularly development oriented to the needs and interest of the disadvantaged and the exploited, does involve non-governmental, voluntary efforts of the community. It is too much to expect this task to be accomplished enirely by the government of the day. Since the government cannot be taken to be entirely a part of the solution-set and is enmeshed in complex power relations, political processes for defining, redefining and reappropriating state power are crucially related to development. Constructive work, voluntary efforts local grassroot level initi-

atives and efforts to build-up self-help, bring in fresh awareness, a new consciousness and new confidence among the deprived. They form a part of decentralised political-social processes for development which are represented by the term "micro-politics" in an inadequate, tendentious and misleading manner. As no micro-economic processes are exclusively so and are meaningless without reference to and organic linkages with macro-economic processes, so are micro-politics of voluntary constructive work by well-meaning, committed people at the grassroot level.

The linkage, what for?

The question is how to link-up the activities of governmental organisations (NGOs), with whom, and for what purposes? If C&S recommendations are acted upon, they would result into government sponsored and encouraged VAs, for undertaking those programmes which are 'passed on' to them for implementing and for spreading awareness about and for acting as watchdogs over official programmes. Effectively, these steps would lead to a new model of selecting development bureaucracy. With trained cadres who would be interchangeable with government functionaries, the VAs would become an extended, although less formal and more self-motivated as well as self-selected and self-appointed, implementing arm of the government who may be expected to ensure a more effective and honest delivery system. True, some scope may be there for innovative programmes more suited to ground level conditions, especially as action-research approach is adopted and some good scholars are attracted to this work. But government support amounting to incorporation by accreditation, dependence on government finance, technical training and personnel would comprise the voluntary character of the work. If the planners do not just embrace the role and functions of V As. in an ad hoc manner but integrate their proposed activities with lower level district or block plans in a systematic manner under a multi-level planning framework, the VAs. would become another kind of public functionaries and their NGO character would become a formal fiction.

To the intended beneficiaries, these efforts would remain indistinguishable from the governmental initiatives and interventions. If tax reliefs, induced trade and industry's philanthropic funds, and inevitably an analogous growth perspective, also travel to rural areas and to the huts of the poor and the deprived, this "micro-politics" would become another exercise at selling the concept of "social responsibilities" of trade and industry. It would be privatisation of the trikle-down process, based on the notion that it is through the prosperity of the better-off that the worse-off may hope to improve their lot, though on the social ladder the latter remain forever on lower rungs. It also maintains the elitism of the pursuit of growth, maintaining the divorce between 'growth' and 'development'. For the poor, their design implies that they have always to look up to external saviours.

Only a supplemental role!

Thus what is needed is genuine, 100 per cent voluntary effort as catalytic agent for bringing the masses in for active, participative role in development—invoking an external input which is keen on fading out. Now that a massive ferment and a certain degree of assertiveness can be seen among the poor masses themselves, it would be futile to prop up external dependence among the poor through sham VAs. Plans are and will remain the major instrument for development but the unresolved questions of control over the political processes governing planning cannot be dealt with through conventional political action. Voluntary action has to be seen as a supplement to conventional political action. Voluntary action does not have to move totally along lines parallel to plan programmes; but it must not merge with them or become dependent on them. As watchdogs and corrective, it has to build alternative fact of power so that the politics of planning changes in favour of the poor. Genuine grassroot level development action among the poor has to be catalysed so that it may take-off on the basis of its inner strength. C&S seem to evade these questions and one is constrained to treat it either as confused or camouflaged. □

Scheduled Casts Development Corporations

SCHEDULED CASTES DEVELOPMENNT CORPORATIONS, presently functioning in 17 States and the Union Territories of Delhi and Chandigarh, have the responsibility of tackling the operational aspect involved in the implemenation of economic programes for scheduled castes, specially mobilisation of institutional credit for income-generating schemes. The Central Government invests to the extent of 49 per cent in the share-capital of these corporations, while the respective State Governments contribute 51 per cent. □

To meet power shortage in North India

Efforts were being made to re-commission quickly the thermal units at Obra and Harduaganj which were earlier damaged in a fire. Efforts were also being made to expedite the commissioning of on-going generation projects. These steps were being taken by the Government to meet the power shortage in the Northern Region.

The Northern Region is facing power shortage due to reduced water level in the hydel reservoirs and also due to the unsatisfactory performance of thermal power stations in Uttar Pradesh and Haryana. The failure of the autumn and winter rains have aggravated the power shortage. □

Reality or delusion !

S.K. Dey

Commenting on the commentary of Prof. Kabra on the conclusions of the recent workshop on voluntarism by Deendayal Research Institute, the author here cautions against undue apprehension regarding voluntary agencies and says, "the people in India—the "non-elite urban" and the "illiterate rural"—have now acquired a native genius of their own for sheer survival. He says voluntary action in India cannot come for an earnest share of development unless its people share first the authority, responsibility and resources for development in an interlocked pattern from the centre down to the village. The voluntary action will play a major role in India, no matter what some of us conspire and contrive against. Prof. Kabra's fear of a camouflage cannot work, he adds.

PLANNING COMMISSION is not a statutory institution; nor is it a part of the Government of India Yet outside the sphere of politics, it's compass covers from the very inception, the totality of the development of India, her people and the plans thereof. It was fully appropriate that its organ—multilingual—Yojana—brought out the unorthodox subject of "voluntary action" in its November Special issue, 1984. It also followed it up partly in the January issue 1985. Would it be too much to hope that as a national organ, it will divide the journal from period to period, on issues which will be fundamental to life in India. Necessarily, it will have to cut accross the rigid frontiers within which it tends normally to confine its components. In our vanity, we forget that what is organic in character is indivisible.

What the Planning Commission did with the extensive volume of thinking that emerged from the 1984 November issue is still to be known But there is one organisation the Deen Dayal Research Institute, headed by the conformed batchelor, Dr. Nanaji Deshmukh, did take the note of the special issue of Yojana. With his devoted team of co-workers committed to studies in the affairs of man and society, the Institute could not leave the matter alone. Nanaji is now pledged away and totally divorced from political partisanship He is busy as a committed bachelor to burn himself in and out in the poor remote district of Gonda. This came about ever since he rejected a political office in the Janata Government and chose instead as a member then of the Parliament from Gonda to do what he considered his obligation to the community that chose him. Gonda has stories of its own to tell. The recent workshop was presided over by our eminent friend Sardar Tarlok Singh—as old as the Planning Commission—indeed the independence of India. The workshop was attended for three days at Delhi by grassroot workers from different parts of the country. They brought in excellent to outstanding experiences. This acted as the first chapter of thinking between co-workers. Members of the Planning Commission were good enough to receive a delegation from the workshop. There was a welcome exchange on the tentative conclusions reached.

A little confusion does exist

Questions have been raised by Professor K N Kabra of the Indian Institute of Public Administra-

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tion, New Delhi. He had made a valued contribution to the November 1984 special issue of *Yojana* on the subject. His current question is titled "Confused or camouflaged ?" It is difficult strictly to state that there is no confusion. To all accounts, life across the world as a whole is going through one of the most turbulent of times and transition that ever faced mankind. India is emerging from the pre-Budhistic stage towards the twenty first A.D. with the kaleidoscope of time and culture all intermingled. It would be absurd, if India were to ecape the pangs of confusion in her emergence. She recovered from the colonial age. Then came the age of Gandhi and Nehru; next the age of Indira and shortlived Janata, all mixed up. Today we move towards a new "dawn" that has started spurting all across the world leaving gerontocracy behind, youth rushes forward to look at things after a long swing round a full circle in between. They say, "the best is the enemy of the good". The concluding document as it stood drafted, suffered necessarily to bend towards all things to all men.

Poor, the main focus

It may, however, be made clear beyond any question, that the total thrust of the workshop, was towards the weaker sections of the community— the poor and the deprived. The seeming absurdity questioned by Prof. Kabra, came in because of the typical Hindu thinking of "hitting the target but not risking the stick", Poverty, why in India—but around the world as a whole,—is a vested interest. All wars have been fought because the poor had been there to be fooled to act the arrow or gun fodder. The powers at the top along with their lieutenants have combined to hold the poor in fiefdom. Religion too has played its part even though with rosaries in hand. Neither Prof. Kabra nor any one need have undue apprehension. The people in India-the "non-elite urban" and the "illiterate rural"—have by now acquired a native genius of their own for sheer survival. Indeed, the nation as a whole has become alive to the malignant virus that has invaded its very interior—the gross inequity flowing ever first time between the "few" and the "many". The convulsion throughout the subcontinent, whether in the Punjab, Assam or infused even in the most tribal of areas, arises from this root cancer in society. People have gone beyond their resilience to bear further with verbiage, burlesque in politics, even palliatives. The ocean is rising visibly. Those who ride must beware. Those ridden, have resolved to stand up with open eyes and shake the tentacles off.

It is superfluous to repeat even telegraphically, what the author had written earlier in Yojana, free of all restraints on the subject. Voluntary action in India cannot come for an earnest share of development—unless this giant country and people share first the authority, responsibility and resources for development in an interlocked pattern from the centre down to the village. This constituted the chief credo in the Nehru epoch as his concept of constitutional federalism. Parliament, legislature, zilla parishad and institutions down below, were to constitute the frame and network of political democracy. Sahakari Samaj—composed of cooperatives—federated from the village up to the national level, were to constitute the arm of economic democracy. Voluntary action through the fifth estate—"forum for the people" yet to be, must find collective expression in the life of the people especially the dumb and mute of today. All these features were worked out scrupulously with Nehru. The organic evolution of the polity, economy and society "new India" was founded by the first Prime Minister. It got sealed off, the moment he passed away. Retrogression began on a brazen scale, so far as "man making" was concerned. No matter what the size, shape and deduction of the Seventh Plan, there is no escape from the road by passed. Or else, the "new dawn" will be a still born one. There will be development, robotism, but minus "man".

The Government of India will continue travelling down hill in the human sense of the term in a direction of retrogression. Of course, whipping boys within or without India, can always be found to account for all our ailings. The Planning Commission as a non-political body of professionals must wake up to the reality free of the will-of-the wisp short cuts. Even if the Government and Planning Commission seek partners in their failures and limitation in "willing" voluntary organs for purposes of the latter's own, the simplistic character of the logic cannot but boomarang beyond all current expectations. The illiterate masses are no longer prone to the foolries played till now. Here lies the greatness of Indian culture in the common folk-even though not in the uncommon-elite. The battle for freedom rises in the mass resolve spearheaded by students. There will emerge common scientists such as Edison, Galileo, Archimedes, Euclid, Leonardo da Vinci, Newton, Jagdish Bose, Satyn Bose, C. V. Raman ,Ramanujan, P. C. Roy, even Einstein. We may leave the learned in our great Government laboratories to pursue scinence and technology in the upper air of space. Why need they bother with the bullockcart, the bio-gas from all organic wastes, the water, the wind, the sun, simple tools and implements that can and must bring in renewable power for the millions ? Why trouble over the rural tools and implements in the modern parlour ? The new grass roots-based scientists can offer tools to the farmers and the housewives through newly trained local artisans, which can ease their bone-breaking labour rather than usher in dependence on the merry-go-round of the elite-native or foreign. Incidentally, even though not directly related, Sant Longwal's latest statement is amazing in native wisdom. His assertion that they would forget totally the Anandpur Sahib resolution, if India were to endow

states with the autonomy such as prevail in USA, USSR and Canada. Pity, he had not balanced the statement by an equal offer of *quid pro quo* with the institutions below at districts and down, in his own state as well in the others.

Catalysing the people

Prerequisite to voluntary action is "people". They can be catalysed for the fullest development of themselves, if there is a forum for freedom near to them. This is where voluntary organs came in as stated in *Yojana* by the author earlier in January 1, 1985. This should be treated by those elders who have had enough of the world and are ready to offer Sanyas for themselves with a "pind" in their own name in the nearby rivers. There will be many a claimant for this role once the stampede begins in right earnest, free of the lure of prizes—even Presidential honour. Real work and real workers are doubly blessed, if so, posthumously.

Youth between twenty and thirty should be the politically non-partisan workers who will eschew politics for ten years and will be uninterchangeable with government servants for the duration. The latter have a training, a discipline and a security. They have to be made to do their task free of biases or private profit. The elders must help sustain the spirit of vigilance and commitment and act the detonators. The task of the voluntary organs will be largely innovation in programmes, experimentation in plans, evaluation of work under implementation directly under State or Public Service Institutions. Voluntary organs may undertake training of govrenment or P. R. workers for rural orientation. Under no circumstances should any voluntary organs be given a part of the plan to implement "interchangeably", with a share of the plan resources. The repercussion of such a measure will spell disaster both for the voluntary organs as well as for the Government. If voluntary organs chose to form a state of national association of their own, it is their own business. Government should have nothing whatsoever to do to promote or finance such an association. Nehru used to state, "you give a piece of gold to the bureaucracy, gold will soon lose its outer lustre, to be followed not long after, by the kernel itself missing, despite their broad integrity, character and discipline by and large"

Rising tide of constructive action

Science and technology are on their way to administering the biggest blow to the caste and class ridden society in its still largely feudal state in India. Masses of youth are rising increasingly to be the foci of power. Behind it lies feudalism in its dying and decaying struggle to hold youth as the captive on the time scale. No Government can stem this tide, not even an army ruled ones except for short intervals. The "two nations within nations"—the "few" against the "many" have to come to a balance. There is no absolute room for equality in life. But equity and balance are a must, if life is to survive. We must lend our eyes and ears to the world of vegetation, animals, even worms! The role of voluntary sector to help boost up growth in this direction is transparent. It will arise in India-no matter what some of us conspire and contrive against it. Prof. Kabra's fear of a camouflage cannont work. The tide in the world is changing course visibly, if we have eyes still clear to see. The space age itself is a counter-poise to comouflage.

Epilogue on voluntarism

This might end with a brief epilogue that covered questions posed by the author to the workshop under discussion in this paper. It may prove of interest to those with minds of their own not yet tired :

1. Life is coterminus with mutuality and so is freedom coterminus with life.
2. What is life ?
   The process that enables life to "live" with "let live".
3. What is "freedom"?
   The right "to live" and "to act"
   without coming in the way of another to do so according to the latter's own "conscience".
4. Is the process now on towards "freedom" or towards "fiefdom"?
5. Constructive work—is it not freedom of, and relf reliance in, people ?
6. The four estates
   Legislative, Executive, Judicial, Communicational } Are they adequate?
7. Is not there a dire need for a fifth estate across the world ? "An estate of the people" "A forum for freedom and self reliance" (Through those who have fuel to burn at no cost to others)
8. Voluntary action calls for
   (i) Leadership as well as volunteers entirely voluntary
   (ii) Training both of leaders as well as volunteers.
   (iii) Institutions "for research" and "extension" as well as "experimentation".
   (iv) Organisations for :
   (a) Planning
   (b) management

(Continued on page 17)

Suited for rural development!

S.N. Tiwari

The author feels that the objective of decentralisation of power can be achieved if the potential of voluntary agencies are fully utilised. He strongly refutes charges made by some authors in the Yojana Special issue of November 1984 that there is no favourable climate for the growth of voluntary agencies or they have no capacity to bear the burden of rural reconstruction. The author is of the view that these agencies have the potential and can work smoothly if they could be helped and encouraged for undertaking specific rural development works.

ALMOST IN ALL the developing countries per capita output has doubled since 1945 but the misery of the rural people still remains. The rich-poor gap has been widening unabated. The same phenomenon we find in case of India. The progress of Indian economy has so far been described in terms of production. Especially in case of agriculture, which is the main constituent of rural economy, inspite of attractive statistics, so far there has not been any tangible breakthrough. The consumption pattern and expenditure of rural people show that more than 40 per cent of population is living below the poverty line. Though a number of rural development agencies were created to intensify the rural development programmes and to approach the target groups and individuals, the poor remain untouched. The Planning Commission does not seem to be satisfied with the performance of voluntary agencies; that is why it is of the view that "Voluntary organisations will have to be associated more closely and actively than hitherto with the programmes for reduction of poverty and with the efforts to make the minimum needs available to the population for improving their quality of life. This will be incorporated as part of the overall strategy for augmenting such programmes meant for the poor, as also as an alternative feed back mechanism for ascertaining whether the target groups have received the benefits meant for them." (quoted in 'Yojana', November, 1984, 'From the Approach paper—the Seventh Plan"). The approach of the Planning Commission towards the eradication of rural poverty attracted criticism from several quarters. Some of them have reservations about the role of voluntary agencies in rural development. Prof. Raj Krishna, former member of the Planning Commission, was of the view that "the sector would consist of so-called voluntary agencies which are simply agents of local 'oligarchy' and|or of the bureaucracy and remains another channel for the misappropriation of funds". (Yojana, November 1984). Mohit Sen commented, "No, no, nothing doing with them"; Kamal Nayan Kabra termed voluntary agencies as "false alternative". All the charges against voluntary agencies can be summed up as follows :

1. There is no favourable condition for the growth of voluntary agencies
2. Voluntary agencies have no capacity to bear the burden of rural reconstruction

TESTING VOLUNTARY AGENCIES

3. Voluntary agencies are nothing more than the agents of local 'dadas'.

In this paper, an attempt has been made to absolve voluntary organisations of these charges.

Valuntarism, then and nwo

Formerly it was believed that voluntary organisations provided honorary service with the help of their volunteers, to the users who mainly belonged to neglected strata of the society. At the time of natural calamities, viz., draught, flood, famine, epidemics, etc. these organisations become more active and render useful service. Now-a-days the meaning of a voluntary organisation has significantly changed. Many of voluntary organisations now have paid workers who are well trained technocrats. The difference lies in the mode of governing a voluntary organisation. Lord Beveridge defines it as : "A voluntary organisation, properly speaking, is an organisation which, whether its workers are paid or unpaid, is initiated and governed by its own members without external control". Beveridge's definition has got its acceptability among a large chunk of academicians.

Prior to 1935, one could hardly cite any concrete example of government-sponsored rural development schemes except some commissions which were the result of a number of famines in different parts of India, viz. Famines of 1861-North West India; 1865—Orissa, 1868—Rajputana, 1878—Bihar, 1895-1900 Bombay. At those moments, voluntary agencies like Indian National Congress, Shantiniketan, Bharat Sevak Samaj, Christian Missionaries, did a lot of relief work. Under the guidance of Mahatma Gandhi, Indian National Congress went to the people not only as a political organisation but as a social and economic reformer also. Rabindranath Tagore tried to generate real love, affection and happiness among the rural people through the Shantiniketan.

After the passing of the Government of India Act 1935, under which provincial autonomy was granted, the government allotted one crore rupees to the provincial governments for rural development programmes.

The concerned Department created appropriate agency and chalked out rural reconstruction programmes. But in the meantime the Second World War broke out. So, the rural reconstruction programme was not effectively implemented. Later on, after the end of the war, the concerned departments launched rural reconstruction schemes, viz. Sevagram Centre (Madhya Pradesh), Firaka Development Scheme (Madras); Sarvodya (Bombay) Nilokheri Project (Punjab) and Etawah Project (U.P.). At that time the voluntary agencies took keen interest in rural development programmes. Sir Daniel Hamiltan acquired some land in the province of Bengal from the government to improve husbandry. He also inspired the organising of Marketing Societies, Consumer Stores etc The Gurgaon Experiment has important place in the history of voluntary agencies which attracted the mind of policy makers concerned with rural development.

Their growing activities!

Though during the post-Independence era, the rural development activities had concentrated in the hand of government organisation, the functioning of voluntary agencies has been appreciable. Through Bhoodan movement, late Vinoba Bhave tried to influence the thinking of people and succeeded in acquiring land as donation from the land lords voluntarily. Mother Teresa has been honoured with Nobel Prize for her work which is totally voluntary. So, many instances may be cited, when the volunteers did exemplary work without a grain of personal interest. One can easily visualise the inherent cooperative instinct of the people at the time of natural calamities, when voluntary agencies came out to serve while the government agencies only completed the formality. So I am of the view that it is not prudent to say that India does not have favourable climate for the growth of voluntary agencies. The history of Indian rural development testifies that the voluntary agencies can work smoothly if they can be helped and encouraged for undertaking specific rural development works.

They have the potential!

So far as the second charge is concerned, I would like to cite the examples of cooperative organisations It is a matter of pride that only cooperative institutions could achieve success to cover more than 90 per cent of Indian villages, with their more than three million societies. Such a cooperative serves rural people by providing credit at reasonable rates, transferring the maximum share of consumer price to the producers through the cooperative marketing societies and protecting the interest of consumers through cooperative consumer societies. Cooperative institutions are solely devoted to the all round development of poor people. Though many of the cooperative organisations are in the grip of several malpractices, they have the capacity and inherent potential to effectively help in carrying out rural development programmes.

No one can doubt that the voluntary agencies are led by local leaders who may be 'dadas' in one sense or the other, one witnesses hesitation on the part of intellectuals in accepting and giving a due place to these rural leaders. Has a thought been given as to how 'dadas' have become the leaders of the poor? Why poor support them? It is only because of the failure of the emergence of genuine leaders. The organisations constituted by poor people, opened the door for the entry of these 'dadas'. Nevertheless, organisations headed by 'dadas' may be acceptable, if they channelise the income from the rich to the poor and from town to village. Till now, in India, in the name of rural reconstruction, only those type of projects had been implemented which finally aided the income of the urban people. In the name of

having 'technical know-how', these projects were very shrewdly fringed with the slogan of 'industrialisation', creation of infrastructure facilities', 'urbanisation', etc.

Decentralise power !

However, one should also look into some other merits of voluntary agencies.

The decentralisation of power is an important factor for the successful functioning of democracy. With the full utilisation of potentialities of voluntary agencies, concentration of power can be easily avoided. Because they involve masses in carrying out rural development plans.

Voluntary organisations, with their diversifying activities, can support, help and strengthen development to meet all kinds of requirements of rural people.

The active participation of rural people in rural development programmes is essential. This could be realised only through the medium of voluntary organisations. Voluntary organisations provide opportunities to the people, who are neither aligned to any political organisation nor working for government institutions, to take active part in the day-to-day activities like rendering voluntary services to poor and helpless section of the society, assisting needy people at the time of natural calamities, imparting education to the unlettered, etc.

Target groups should Participate !

The members and workers of these agencies are not super human beings and hence are very much prone to commit mistakes. But it is imperative that they must come from the real target groups. Voluntary organisations constituted by the rural people, for whom development work has to be executed, must be efficient and effective more than the bureaucrats.

Last but not the least, I would like to add that the voluntary agencies have the capacity and potential to monitor rural development programmes. Past experiences show that voluntary agencies can work smoothly and efficiently. In addition, they also open the door for active participation of beneficiaries. But voluntary agencies must be organised by the target groups or their representatives themselve. This is the need of the hour when the new government is seriously seized of the rural reconstruction programmes. □

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(c) evaluation

(d) resources

9. To provide technical personnel in Government or P. R. Institutions in "people's orientation".

10. Voluntary action vis a vis Government as partner ?

    Participants ? or as "path finder" and "pace setters"?

11. Democracy-political, economic, social, functional ?

12. Voluntary organs vis a vis political parties ?

13. Voluntary organs vis a vis people, at grass-roots ?

14. The "Double think", "Double speak" and "Double act" feudalism to historic roots of Indian character. The way out if any except through work that alone can cut across ?

15. Cross fertilisation in thinking, dynamism, coordination, consolidation ?

16. Prevention of uprootal from the soil towards technology-cum-sociology-cum-life in the rapid pollution and starvation in the ocean of rural and urban India ?

17. How to prevent xx "Mr. Hyde" from over-taking "Dr. Jekyll"?

    The answers to the questions are self evident. □

Forestry in the Seventh Plan

THE GOVERNMENT HAS PROPOSED to give a new thrust to forestry in the Seventh Five Year Plan to improve & strengthen the husbandry of the forests of the country and to raise the productivity of the forests for meeting the essential needs of the people and the nation on a sustained basis.

The broad features are to afforest as speedily as possible all denuded areas including mangroves. About 5000 hectares in Sunderbans of West Bengal are proposed to be afforested at a cost of Rs. 4.5 crore (5 per cent or so of the forestry sector outlay) during the Seventh Five Year Plan. This would help minimise wind and wave-induced soil erosion and would stabilise the unique mangrove eco-system in Sunderbans. It would also provide gainful employment to the communities in and around the area. □

Increase in SC/ST Scholarship amount

Pre-mastric scholarship for students belonging to SC and ST will be raised from Rs. 30 p.a. to Rs. 90 p.a. The Union Ministry of Home Affairs have also agreed to revise parental income from the existing Rs. 6,000 per year to Rs. 15,000 per year.

Draft Seventh Plan by July 1985

Yojana Correspondent

THE FORMULATION of the Draft Seventh Five Year Plan is scheduled to be finalised about the end of July, 1985.

According to the Annual Report of the Planning Commission for the year 1984-85, work in connection with the formulation of the Draft Seventh Plan has since been undertaken in the light of the policy thrusts and programmes enunciated in the Approach Paper. Earlier, the Approach to the Seventh Five Year Plan was finalised and 'placed' before the National Development Council in July 1984, which after approval by the NDC was placed on the Table of Parliament.

The Plan Coordination Division of the Commission had prepared preliminary guidelines for the Seventh Plan and circulated these to the State governments in September, 1983 and, after approval of the Approach Paper by the NDC, detailed guidelines were issued to the Central Ministries and the State governments for the drawing up of the Seventh Plan.

One hundred and twentytwo Working Groups on various aspects of the Seventh Plan were set up. The Plan Coordination Division issued, a set of guidelines to the Divisions of the Planning Commission for drawing up of evaluation reports in respect of the recommendations of these Working Groups. These guidelines proved useful and provided a standardised methodology for evaluation work undertaken in respect of sectoral|sub-sectoral reports of Working Groups.

Innovations in Annual Plan document

The Report states that for the first time certain innovations were made in the Annual Plan document for 1984-85 in order to make it a more comprehensive and useful work of ready reference, and for ascertaining the position regarding sectoral|sub-sectoral Plan programmes, and the plan outlays over the five years of the Sixth Plan including the budgetary Plan outlay for 1984-85.

Activities of the Divisions

All the 26 Divisions of the Planning Commission were engaged in the preparation and finalisation of the Approach to the Seventh Five Year Document for the consideration of the National Development Council during the year. Besides, they were also busy with the appraisal of the resources for the Seventh Plan and of the first year of the Seventh Plan and also for the last year of the Sixth Plan. Simultaneously, the various Divisions were engaged in holding discussions with the State governments|Union Territories and Central Ministries in finalising the Annual Plan for 1985-86, the first year of the Seventh Five Year Plan.

For the preparation of the Seventh Plan (1985—90) and Annual Plan 1985-86, the Planning Commission called for estimate of resources from the States, Union Territories and the Union Ministry of Finance and held discussions with the officials of the State and Union Territories for arriving at agreed estimates of their own resources and Central assistance which constituted the basis for finalising the Plan outlays for 1985-86. In addition, the Commission continued resource estimates exercise for the Seventh Five Year Plan. These, among others, included preparation of the reports of the Expert Committees on the Question of Provision for Maintenance of Assets as part of Plan outlay and on Incorporation of Effects of Inflation on Resources and Costs of Investments in the formulation of the Seventh Plan.

Anti-poverty measures

As a result of the efforts of the Commission, the Ministry of Agriculture has proposed the setting up of a bureau for management of natural calamities and a few schemes for disaster preparedness to be taken up during the Seventh Plan period as Centrally-sponsored scheme such as (a) construction of cyclone shelters, (b) augmenting the existing forecasting, warning and communication system, (c) purchase of equipment for rescue and relief operations, and (d) training of personnel.

Added to this, the Commission prepared and contributed a number of papers relating to evaluation of Anti-Poverty Programmes, Impact of Schemes on Village Economy, Special Employment and Public Works Programmes, Rural Development and Poverty Alleviation, Voluntary Organisations and Rural

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Nuclear energy : some issues and choices

(Part 5)

Shibdas Burman

In this concluding part the author discusses the essence of the problem of disposal of nuclear waste, why it will not go away, and looks at some of the alternatives, such as the concept of "multiple barrier", the use of borosilicate glasses and the synthetic rock mineral wasteform. The author adduces more recent data on the performances of various reactors. He cites the case of Japan stockpiling uranium to strengthen her economic security, as well as the search for uranium by some industrialised nations in the third world countries. In the end he states the conclusions of a study on the consequences of a possible accident at a Fast Breeder Reactor site, following it by his reflections on nature and man.

IN THE EARLIER article we had an opportunity to dwell on some aspects of reactor safety and of decommissioning of the plant at the end of its life. In this concluding part we shall try to understand the dimensions of the problems of disposal thrown up by nuclear waste, which Catherine Thiel Quigg chooses to call 'the trash that glows'.

In the concluding passages further analysis of the reactor performance would be attempted based on some more recent data.

Since the dawn of eternity there have been firing off of alpha, beta, and gamma radiations from radioactive nucleus. We cannot alter that. But we have to take measures to protect people from the consequences of exposure to those radiations : increased risk of cancer (at low levels) and sickness and death (at high level). That radiation induces gene mutations and chromosome changes was known from H. J. Muller's work in late 1926 (published 1927.)

Energy crisis is at the backdrop of the problem—for the world in general and for India in particular. We do not have sufficient oil and natural gas and coal to meet our needs for many decades. Nuclear energy through atomic fission for the next several decades will have to have a future if the country is looking forward to a future. There is need for a judicious mixture of nuclear, thermal and hydel resources of the country. The great chemist Mendeleyev wrote in 1887 that it was a crime to burn coal, we should extract chemicals from it. The tectonics of an area, inter alia, should permit the setting up of a nuclear power station. Alvin M. Weinberg in 1971 advocated the concept of nuclear parks as a way of improving the safety of reactors and their subsystems.

There are two other sources of energy sufficiently powerful : solar energy and fusion energy. The first one is pollution-free and the second one is almost pollution free. If these two energy sources were available at comparable cost at present, none would use fission energy for peaceful purposes. Hannes Alfven

The views expressed here are those of the author, and not of the office where he works

in a memorandum to Senator Mike Gravel on April 2, 1971 expressed his belief that if much effort were spent on the development of a fusion reactor, fusion energy would be available in not the too distant future. Confining our discussion to fission energy, Alfven furthermore thought, that in a full scale fission programme the radioactive waste would soon become so enormous that a total poisoning of our planet is possible. Under such conditions safety margins, which are acceptable in other fields, are inadequate, opines Alfven. It is not evident, he continues, whether the waste problem can be solved in a satisfactory way.

Art is long. But as the writing space, like life, is short, my endeavour here will be to try to explain the essence of the problem of nuclear waste, why it will not go away and look at some of the alternatives—the point and counterpoint of the debate on nuclear waste. The solution to this problem is at the heart of the issue of nuclear power generation. And it is an issue with both national and international ramifications.

Nuclear waste

Before entering into discussion of nuclear waste, let us define two terms, disposal and storage. By disposal of wastes is meant the isolation of nuclear wastes, by natural and man-made barriers, that does not require continued maintenance or control. Human access becomes difficult. By the term storage we mean isolation that permits easy access to wastes. In this case continuous surveillance is required.

Wastes are of several kinds: high level, intermediate level, low level and mill tailings. The US scientist use another term transuranic wastes, containing elements with atomic numbers higher than uranium, coming mostly from reprocessing uranium fuel. Although, these radionuclides are not so intensely radioactive as the nuclear fission products of high level waste, they remain radioactive much longer.

We use the definitions of wastes used by Fred Pearce in *New Scientist*, 3 November 1983.

High level : material left behind after nuclear fuel removed from reactors has been reprocessed to extract uranium and plutonium. It is extremely radioactive and gives off heat. Spent fuel that is not to be reprocessed is also categorised as high level.

Intermediate : a mass of material containing a wide range of radioactive material, some with a short life, others with half-lives of thousands of years. The US categorises long-life transuranic wastes separately.

Low levels : the rest of the reactor waste. Short-lived radioactivity that has contaminated all manner of materials. These wastes are the least dangerous but by far the most bulky.

Tailings : Waste left after the mining and milling of uranium contains small but significant amounts of radioactive materials, some with an active life of several thousand years.

The variety of newly formed radioactive materials created as a result of fission of uranium 235 may be divided into two classes, the fission products, such as, iodine 131, cesium 137, and strontium 90, and the transuranics, such as, plutonium 239, neptunium 237 and americium 241. The major dimensions of the task of protecting the public is posed by those elements which have the long half-lives that range from one thousand to one-hundred thousand years. The great scientific challenge is created by elements with long half-lives · we are asked to predict long in advance what the fate of the materials will be if these were buried somewhere.

As of 1980 in US there were roughly 77.4 million gallons of highly radioactive liquid wastes, 6,700 metric tons of spent nuclear reactor fuel, and 152 million tonnes of radioactive tailings left over from uranium mining and processing (US Dept. of Energy, 1981), and recent analyses (US Office of Technology Assessment, 1982) indicate that over 72,000 metric tons of spent fuel will be produced in US by the year 2000. In addition, if a solution to the waste problem is not found, some plants may be forced to cease operation in US in the early to mid-1990s (Steve H. Murdock, et. al.).

Multiple barrier

Confining the discussion to high level wastes there are three main methods : the stow-away cycle, the throw-away cycle, and the reprocessing cycle (S. Miller, ES&T, v.17, n.9, 1983). The stow-away cycle defers the problems of treatment and ultimate disposal. In the throw-away cycle uranium or plutonium is not recovered for future energy generation. The reprocessing with vitrification, the changing of the waste into glass or a glassy substance by heat and fusion is being investigated by several nations. It is thought that radioactive borosilicate glasses would be interred in mined repositories 500 to 1000 meters underground, in suitable geological structures. The underground storage concept uses the idea of "multiple barrier" that is, a system of successive protective coverings and burial arrangements.

Raymond Siever, a geologist, in an article in the *Annals of the New York Academy of Sciences*, 1981 objects to the plans for encapsulating high-level wastes in a borosilicate glass, because there is no assurance that those glasses will not devitrify. "This process is a change from the glassy state to a crystalline state under the influence of the heat, such a process inducing many possible cracks which would increase the likelihood of leaching and dissolution of the glass and its radioactive contents". (Ad hoc Panel of Earth Scientists USA, 1978). Ted Ringwood of Australia similarly questioned the appropriateness of glass for burial within the earth (*New Scientist*, 15 September 1983).

Synroc-mineral wasteform

Ringwood approached the waste disposal problem using geochemical principles. Many natural minerals can accept radioactive elements into their crystal lattices. These minerals are more stable than glass and, it is said, many have survived for thousands of millions of years in a wide range of geochemical environments, in conditions far more severe than they would ever encounter in a man-made underground repository. He created a Synroc (synthetic rock), a dense crystalline titanate ceramic mineral wasteform, which may be vastly more stable than borosilicate glasses. The synroc constitutes an "immobilisation barrier", complementary to and independent of the geologic barrier. Earlier, Gregory McCarthy and the Indian born US scientist Rustum Roy tried to exploit the idea of mineral wasteform. It has been decided to construct a demonstration pilot plant to produce Synroc in Sydney.

Ringwood states that the French Government commissioned a study of radioactive waste management—the Castaing Report—which threw doubts on the capacity of glasses to immobilise transuranic elements over long timescales. It suggested that these elements be removed from the waste during reprocessing and treated separately. A highly effective way to deal with the transuranics would be to immobilise them in Synroc-E (a variety of Synroc), asserts Ringwood. The combination of an advanced wasteform such as Synroc with disposal in deep drillholes provides a simple, yet extremely safe strategy which Ringwood believes most people will readily understand.

Two principles

Charles B. Hunt, former executive director of the American Geological Institute who studied the problem of underground disposal of nuclear wastes in US, concluded that there was really no satisfactory location in the United States and that the US scientists were confronted with a choice of the lesser evil.

Writing in the *Bulletin of the Atomic Scientists*, April 1984, Hunt enunciates two principles : "A first principle in selecting and developing a waste-disposal site is that there is going to be an accident. It is a matter of when, not whether. In ordinary engineering works we plan for the 100-year flood or other catastrophe ; in storage or disposal of radioactive wastes we must consider the 500, 1,000 even the 10,000 year catastrophe. Development of a disposal site involves so many variables that failure is inevitable somewhere or sometime during the long life of the many variables. That such an accident is inevitable is tacitly conceded by a policy that seeks to isolate wastes from densely populated areas."

"A second principle is that there is no site in the United States, except Death Valley, where an accident would not imperil a major body of water. Consequently a spill would not be confined to the site. Obviously some geological conditions are worse than others, but some of the 'choice' sites seem to include worst possible conditions."

Hunt appreciates the complexities and the uncertainties of thrusting geology and radioactive wastes into longterm interactions. He queries, "But do we need to dispose of the wastes? Shouldn't we change our policy and start recycling uranium 235 and 238 and plutonium ?" He then speculates on the advantages of long-term surface storage instead of repository disposal. For years there have been debates in the US on the question : To reprocess or not to reprocess the high level wastes.

Swedish plan

The spent fuel enclosed in copper canisters would be buried at a depth of about 500 metres in the crystalline bedrock (gneisses, granite), whose hydraulic conductivity is sufficiently low and chemical conditions favourable. From seismological studies Markus Bath of Uppsala thinks that since the uppermost kilometre or so of the bedrock is fractured and brittle, the deeper locations be investigated as well. Bath (1979) estimated the risk of earthquake fracturing affecting a storage place at a depth of 500 m in the Swedish crust to be of the order of 10^{-6}, provided the place is selected outside the established fracture zones. The KBS report no. 3 states that repository depths of up to about 1000m should not pose major technical problems. The Swedish crystalline bedrock (formed 900 to 2,000 million years ago is very stable geologically and no major changes are expected in the hydrological or geochemical conditions of the bedrock at a depth of several hundred metres over the next million years or so.

Figure 4 taken from the Final Storage of Spent Nuclear Fuel KBS-3 (May 1983) depicts radioactivity in spent fuel. No Swedish reactor shall be in operation after 2010

Some recent data : comparative performance of reactors

In Part 3 we had an opportunity to study the comparative performance of some reactors based on 1981 and 1982 data. Table 12 depicts the world's top 10 reactors during 1982, among 168 units whose capacity equals or exceeds 500 MWe. Four Ontario Hydro's Candu reactors were in the top 10 list. Japan's Ikata 1, with a gross capacity factor of 99.3 per cent got the top spot. The gross capacity factor is defined as gross unit generation divided by the perfect gross output for the period of interest.

On a lifetime basis the Candu reactors occupy seven of the top 10 positions (Table 13). The top slot is taken by the Bruce 3 reactor with a gross capacity factor of 87.4 per cent. Table 14 shows the comparison of average gross capacity factors—Ontario Hydro and the world nuclear power reactors above 500MW. The data are taken from the Ontario Hydro

NOD-12 on world nuclear power reactor performance 1983.

An independent survey (Nuclear Engineering International, May 1984 on nuclear station achievement to end of 1983) of the performance of power reactors shows the heavy water reactors (HWR) mostly the Canadian Candu type, leading the rest of the world (Fig. 5, AECL-6328). The Mag nox is a natural uranium fueled, graphite moderated, CO_2 gas cooled reactor.

L. Schipper and A. Ketoff studies on energy policy (1983) showed that Canada enjoys the lowest electricity cost among industrialized OECD countries The OECD countries are . Canada, France, West Germany, Italy, Japan, Sweden, United Kingdom, United States and Denmark.

IAEA Study

According to IAEA (the International Atomic Energy Agency), Vienna, 1983 study, the 12 PHWRs recorded in PRIS (IAEA Power Reactor Information System) in 1982 reported an average of only 446 hours of planned outages for maintenance and repair. AGRs (Advanced gas-cooled, graphite-moderated reactor) and GCRs (Gas-cooled, graphite-moderated reactor), however, reported much higher figures. The average loss per reactor-year for LWRs during 1971-1982 was 2523 hours, comprising of planned outages of 1756 hours and unplanned outages of 767 hours. The IAEA study further stated that on the average, large-sized DWRs show lower performance factors than small and medium-sized ones It is only in the case of PHWRs that the larger units have been performing better over their lifetimes so far.

It appears the foresight of Homi J. Bhabha to opt for Candu reactors was justified by later developments.

Uranium stockpiling, Japan

The Ministry of International Trade and Industry (MITI), Japan has decided to encourage uranium stockpiling from Financial Year 1983, as part of a plan for energy stockpiling. Presently, power companies in Japan are securing uranium resources of 200,000 short tons U_3O_8) of uranium concentrate mainly by long-term contracts. To meet the supply and demand balance an additional 130,000 short tons are to be provisioned by the year 2000. Japan's potential risk against stable uranium supply is liable to be amplified with the expansion of its nuclear power generation. Uranium stockpiling and procurement will become one of the major policies for the country's economic security, as nuclear energy contributes to a greater part of electricity supply in Japan.

Prospecting abroad

The prospecting for uranium abroad is an important topic. Some of the developed industrialised countries are carrying on the search for uranium in the third world countries. Niger in Africa is one key target area. Gabon, Algeria, Central African Republic and Namibia are the other key areas.

FBR accident study

Regarding the fast breeder reactor route there have been debates among scientists. The scientists argue over the heads of each other, generating much passion. The Political Ecology Research Group (PERG), Oxford, in 1978 conducted a study of the consequence to the public of a severe accident at a commercial fast reactor located at Kalkar, West Germany. The study assumed a sodium-cooled FBR of 1300 MW electrical output. This reactor was assumed to suffer an accident such that 10 per cent of the core became vaporised, the remaining 90 per cent of the core being molten. Total failure of containment was assumed, this resulting in release of a cloud of radioactivity into the atmosphere. A computer programme then predicted the consequences to the public in terms of casualties and longterm health effects. The enormity of this accident raised an important question to the investigators. They write, "It is generally accepted that probabilities estimated beyond the one in a million mark made little sense where complex technological systems are concerned. The nuclear industries and controlling authorities have argued that any accident risk is acceptable provided the probability is sufficiently low. This risk is defined as probability consequences."

Continues the PERG argument; "Where accidents of this enormity of consequence are concerned the question arises: is any such risk justified when the probability cannot be adequately defined ? The ruling of the Freiburg High Court, on 15 March 1977 for the Wyhl case (a PWR reactor) was that the 'remnant of risk', however small, was not justified in view of the magnitude of the consequences of a severe accident. It may be that other courts will take this view"

A philosophical reflection

Sigmund Freud conceived of the instinctive life of man as essentially dualistic, with one element—the Eros which is the life-affirming principle, and the other one, the Thanatos, the death instinct. The old Indian myth of Lord Shiva and his cosmic dance expresses the same idea. This truth is enshrined in the wild music created out of the pipe of the goat-footed Greek demigod Pan in the course of his wanderings through the forest at night. Nuclear energy, Janus-like, has two faces and it shares the duality of nature—it is both a hope and a peril. In opting for nuclear energy, man has made, as stated by Alvin M. Weinberg, a Faustian bargain with the society--whereby in exchange for an inexhaustible energy source, meticulous attention to details and a certain degree of stability is demanded of the society. This does not mean that nuclear energy is devilish. Technology has its own momentum—the atom has come to stay. Today, it is

the theme of fission energy development, tomorrow the canvass may be shared by the one of fusion energy. The human situation finds echo in the poetic diction of Robert Bridges,

> Our stability is but a balance
> And our wisdom lies,
> In masterful administration
> Of the unforeseen.

In his tryst with destiny man needs both faith and wisdom.

Table 12

Gross capacity factor (in percent) of world's top 10 reactors in 1982. The capacity of the reactors equals or exceeds 500 MW

1. Japan	PWR	Ikata-1	99.3
2. Canada	PHWR	Bruce-4	94.6
3. West Germany	BWR	Isar-1	93.9
4. USA	BWR	Millstone-1	93.6
5. USA	PWR	Oconee-3	92.9
6. Canada	PHWR	Pickering-4	92.9
7. Canada	PHWR	Bruce-2	90.2
8. Canada	PHWR	Bruce-3	89.9
9. West Germany	PWR	Grafenrheinfeld	87.6
10. Finland	BWR	Olkiluoto-2	86.6

(Source : Ontario Hydro, NGD-12, April, 1983.

Table 13

On a lifetime basis, the gross capacity factor (in percent) of world's top 10 reactors in 1982. The capacity of the reactors equals or exceeds 500 MW.

1. Canada	PHWR	Bruce-3	87.4
2. Canada	PHWR	Bruce-4	86.4
3. West Germany	PWR	Stade-1	83.3
4. Canada	PHWR	Pickering-4	82.3
5. Canada	PHWR	Bruce-1	81.4
6. Canada	PHWR	Pickering-2	80.7
7. West Germany	PWR	Grafenrheinfeld	80.5
8. Canada	PHWR	Pickering-1	79.3
9. Canada	PHWR	Pickering-3	79.0
10. Belgium	PWR	Doel-3	78.9

(Source : Ontario Hydro, NGD-12., April 1983.

Table 14

Comparison of average gross capacity factors—Ontario Hydro and world nuclear power reactors above 500 MW

	Ontario Hydro Candu	PHWR	PWR	BWR	GCR
1979	78:9	78.9	52.6	59.9	48.9
1980	85.4	85.4	59.0	59.7	52.4
1981	90.1	90.1	62.5	59.9	50.5
1982	86.9	86.9	59.0	61.8	53.7
1983	83.5	77.2	61.5	58.8	57.3
Lifetime	80.8	79.7	57.9	56.9	48.5

(Source : World Nuclear Power Reactor Performance 1983, Ontario Hydro, NGD-12, April 1983.

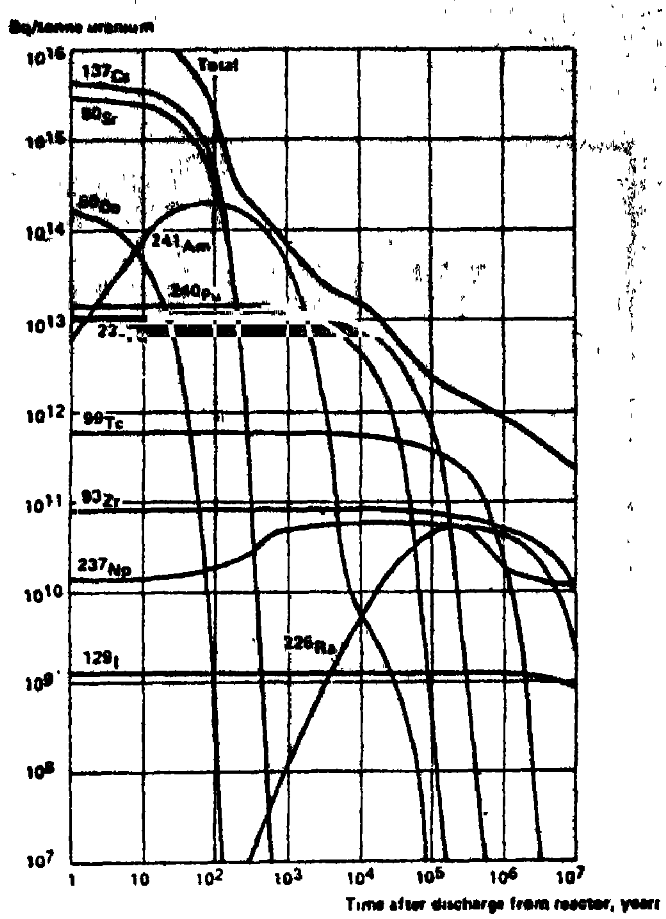


Fig. 4 Radioactivity in spent fuel
(Source : Summary of Final Storage of Spent Nuclear Fuel KBS-3, SKBF, Stockholm, May 1983.)

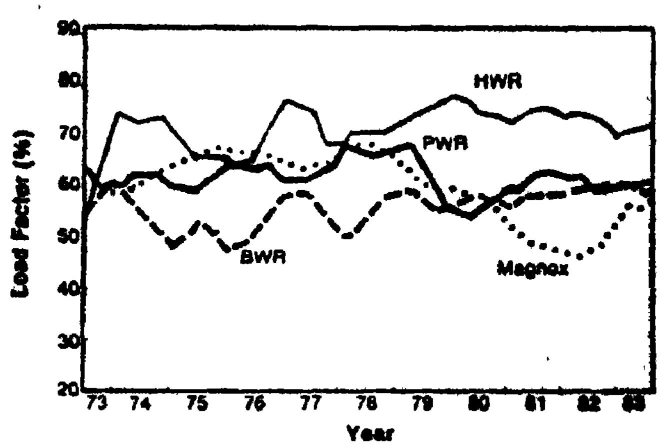


Table 14

Peroframance of CANDU and other reactor systems—to end of 1983

(Source : Nuclear Engineering International May, 1984)

Concluded



Employment potential of brick kiln

R. K. Pandey, Shanti Sarup and Ved Prakash

Herein the authors examine the extent and pattern of gainful employment of rural population through brick-kiln industry. They call for increasing brick production units substantially to bridge the gap in housing shortages and other related development activities. This will in turn push up the employment opportunities for the rural poor.

RURAL UNEMPLOYMENT in this country is more in the nature of under-employment of varying degrees of those who are prepared to work for their livelihood. Agricultural labourer is one of the least paid of workers. As a result a substantial section of rural labour force lives in a state of utter poverty. During the last three decades, of the annual addition of about 5 million to the labour force, only 5.5 lakh or just 11 per cent are at present able to secure employment in the organised sector, leaving the remainder to take a livelihood in agriculture or get petty and extremely low level of incomes from self-employment. According to NCA estimates obtained under different assumptions with regard to participation rates for projecting the total increase in the rural labour force, the total increase in the rural labour force will not be less than 100 million persons by the end of this century.

According to the sixth plan document, the net addition to the labour force during 1980—85 is likely to be 34.4 million out of which 9.6 million will be added to the labour force in the urban areas and 24.7 millions to the labour force in the rural areas. Provision of employment for this huge addition to the labour force will be a big challenge to rural development planning.

It is obvious that agriculture alone cannot absorb all job seekers. With the rapid growth of population and labour force in the context of scarce land resources, the problem of finding non-agricultural employment assumes greater importance. The answer lies in exploiting the potentialities of small-scale industries, cottage and village industries. These industries have to be identified and the way to tap their potentialities determined Brick and tile manufacturing industry is one of those which is not only labour intensive but can also help in the improvement of living conditions in rural and urban areas.

Bricks and tiles in housing

Bricks and Tiles manufacturing becomes important in the context of providing shelter which is an important human need next to food and clothing. Besides shelter, bricks are used in development of infrastructure needed for improvement in the levels of living. Among various uses of bricks and tiles, housing is important. This has assumed formidable magnitude and complexity. Its shortage in the beginning of the Fifth Plan was placed at 11 8 million units in rural area and 3.8 million units in urban areas. At present about 83.3 million families are without proper housing.

For the year 1981, the shortage of housing as estimated by the National Building Organisation was 21.3 million units—16.5 million in rural and 4.8 million in urban areas. The estimate for the shortage of housing for the year 1991 is 23.6 million units comprising of 20.2 million in rural and 3.4 million units in urban areas. With the rise in population the demand for housing units will further accelerate in coming years. Therefore, for meeting the demand for housing and other allied services there is a need to augment the production and supply of bricks and tiles in the country.

According to some estimates, during the year 1978, the production of bricks was placed over 70,000 million annually in about 25,000 production units scattered all over the country. About 700 million tiles were produced annually during the same period.

Keeping in view the importance of this industry in the provision of basic raw material for construction activities, and providing employment to the rural labour force in off-season, this study has been undertaken for examining the various aspects of bricks and tiles industry in rural sector.

The specific objectives are:

(i) to examine the extent and pattern of gainful employment of rural population, and

(ii) to study capital structure, and input-output ratio in the brick kiln industry in selected areas.

Data base

The study is based on a sample survey data collected from the sampled brick kilns located near Karnal town in Haryana and in the rural areas of Delhi. These two locations were purposely selected as many developmental and construction activities under public as well as private sectors have been taking place during the last few years. Five kiln owners from each of these two study areas were selected randomly to obtain information about the land used in the industry, asset structure, method of brick making, pattern of employment of labour season and months of work, wages paid etc. Data on availability and source of raw material e.g. clay, sand, coal etc. quantum of bricks and tiles produced, their grades, mode of sale and sale price and other selected items were obtained pertaining to the year 1982-83 (October 1982 to May 1983).

Description of the brick kiln

The production system of clay bricks and tiles contitnues to adopt the traditional technology for processing the clay and burning of bricks and tiles by manual labour. The operations involved are performed manually such as digging the soil and its preparation, moulding of bricks and tiles with the help of wooden or iron frames and their conveyance to the kiln etc. Bull trench kilns have been adopted for burning bricks and tiles in the study area Clay, sand, water, steel and fuel are the important ingredients used in the making of bricks and tiles. Trenches were observed to be of two different sizes, having production capacity of bricks and tiles to the order of 25—30 lakhs and 50—60 lakhs in four or five rounds per season depending on the area of the trench as well as prevailing weather conditions in the area.

Labour employment in brick kiln

As already explained, brick manufacturing is labour-intensive industry. It provides employment to skilled, semi-skilled and unsikiled workers drawn from the rural areas in the lean period. Generally, marginal farmers and landless labourers migrate to the kiln sites in search of jobs. These kilns operate during the month of October—November to April—May and provide jobs to the entire members of the labourer households willing to take up work. The extent of employment and wages received by these workers are presented in Table I to indicate the magnitude of available empolyment and income of the rural workers during the lean period on an average brick kiln having capacity of production around 25—30 lakhs in a season.

On an average about 40—55 families get gainful employment for different operations on the kiln sites. Most of these labourers are hired on contractual basis and work according to their convenience for few hours a day, while workers engaged in the burning process of bricks work for 8 hours a day in shifts. As custom prevailed, these workers are brought to kiln sites at the kiln-owner expenses and are provided free shelters for their families and animals on these kiln sites. They are also provided burnt coal as fuel for their use obtainable from the trenches after every round of fire in the kiln. In addition to this, they earn daily wage of Rs. 17 to Rs. 21. As from most of the families, two persons work together, their incomes per day is doubled.

On an average, a brick kiln provides job opportunities to approximately 90 persons for a period of 120 to 150 days in a year. As per industry sources, at present, there are about 30,000 units engaged in the production of brick, this sector provides job to more than 2.7 million persons. The number of persons employed on account of linkages and multiplier effects could be much higher. As already discussed, for bridging the gap in housing shortages and other related development activities, the brick production units have to be increased substantially. This will in turn push up the employment opportunities for the rural population.

Capital outlay and output

Based on the investigations, the average capital outlay in brick manufacture is given in Table II. At a particular site the kiln is operated for 4 to 5 years. Therefore, the expenditure on land, trench making construction of sheds have been distributed uniformly over 4 years. Total annual outlay for a brick kiln was Rs. 6.74 lakh producing about 25 lakh bricks. Expenditure on fuel was the maximum accounting for 46.7 per cent of the total outlay. The wages accounted for 28.8 per cent of the outlay. The cost of manufacturing one thousand bricks was Rs. 268. The average sale price is higher than the cost which shows the profitability of the enterprise.

Conclusions

With the expansion of population, the level of unemployment will rise further. The capacity of agricultural sector is limited and it cannot absorb huge

quantity of unemployed labour force. The problem of unemployment can be tackled by exploiting the potentialities of small scale industries, cottage and village industries. These industries have to be identified and the way to tap their potentialities determined. Brick and tile industry is one of the small scale industries which is labour-intensive and helps in bringing improvement in the living conditions.

Table : 1

Average capital outlay and output per brick kiln*

Items	Annual cost (Rs.)
Fixed outlay	
1 Land for clay, trench & labour huts & office	50,000
2 Cost of trench making	7,500
3. Cost of chimneys (two)	15,000
4. Cost of construction of office and sheds	12,500
5. Licence and other charges and office establishment	1,000
6. Pump for drinking water & motor engine	1,250
7. Administrative cost	15,000
Total—(1+7)	1,02,250
Variable outlay	
8 Wages for moulding of bricks, conveyance to trench, loading and unloading, and burning of bricks and tiles	1,94,700
9 Sand & water expenses	24,000
10. Fuel (by rail)	3,15,000
Total—(8+10)	5,33,700
Total cost—(1+10)	6,35,950
Interest @ 12% p.a. for six months	38,160
Grand Total	6,74,110
Output of m25 lakh bricks	7,47,500
Cost of mproduction of thousand brick	268,50
Current average sale price per thousand of bricks (Averaged over different grades)	299.00

*(1) Kilns with average production capacity of 25 lakh bricks per season located in the rural area of Delhi.

(2) Wages and fuel cost have been calculated by making an allowance of 20% loss due to breakage & other natural losses.

(3) The output of bricks have been classified as A, B & C types in the ratio of 70 . 20 : 10. Sale price has been calculated at following rates per 1,000 bricks :

Rs. 320 A type (1st class)
Rs. 260 B type (2nd class)
Rs. 230 C type (3rd class)

The study reveals that about 90 persons are employed for a period of 120 to 150 days during a year on a brick kiln, providing 25 to 30 lakhs of bricks annually. The current employment level is about 2.7 million persons. This is expected to rise in the future. Total capital outlay per kiln was Rs. 6.74 lakhs. The expenditure on fuel was maximum accounting for over 46 per cent. The study demonstrates that the industry has a great promises in alleviating the rural unemployment problem. Any improvement in this industry will help in solving the housing problem and will have a bearing on the living conditions of ever increasing rural and urban masses. Bricks and tiles manufacturing become important in context of acute housing shortages.

(Contd. from page 18)

Industrialisation, Administiative Structures for Rural Development, etc.

The Commission also suggested the introduction of a number of new schemes for the integrated development of rural areas and for better implementation of on-going programmes. These related to : (i) computerised rural information system, (ii) special livestock production breeding programme, (iii) re-organisation and revamping of the Administrative set-up for rural development, (iv) strengthening of revenue machinery and updating land records, and (v) setting up of composite rural training and technology centres at the district level.

The Commission also worked out the allocation of funds under the Integrated Rural Development Programme on the basis of selectivity and incidence of poverty in the country which marks a major departure from the current policy.

Science and technology

For the first time an effort was made to integrate the science and technology component in the programmes, thrusts and priorities in two important areas of agriculture and medical sciences and also ensure adequate coordination with other S&T agencies and departments.

UNITY, HARDWORK, INTEGRITY

FOR

PEACE, HARMONY, PROSPERITY

Madhya Pradesh in Seventh Plan

A. K. Chaturvedi

THE SEVENTH FIVE YEAR PLAN of Madhya Pradesh, currently under preparation, outlines the top priorities to agriculture and food production.

A total outlay of Rs. 279 crore has been proposed for agriculture in the state Seventh five-year Plan Of this a sum of Rs. 92.02 crore has been earmarked for agricultural activities under the Tribal sub-Plan and Rs. 61.30 crore under the Harijan Special Component Plan.

The Plan provision for agriculture has been placed under four major heads : (i) agricultural production —Rs. 137.90 crore, (ii) minor irrigation—Rs. 79.10 crore, (iii) microminor irrigation—Rs. 12.50 crore, and (iv) soil conservation Rs. 49.50 crore. The Sub-Plan and Special Component Plan areas share in the expenditure would be in the same ratio of 33 per cent and 22 per cent as in the total amount.

The Seventh Plan targets include cereals—150.16 lakh tonnes, pulses 33.60 lakh tonnes—total foodgrains—183.76 lakhs tonnes, oilseeds 24 lakhs tonnes, sugarcane—2.50 lakh tonnes and cotton 4.65 lakh bales. Soil conservation work would be done in five lakh hectares of land.

Under minor irrigation works three lakh new wells would be constructed and 50,000 old wells repaired. 2 25 lakh electric and 1.15 lakh diesel pumpsets and 10,000 persian wheels would be installed in these five years. 50,000 sprinklers would also be erected, 5,500 bio-gas plants are also proposed to be constructed in the State during the Plan period.

Food production

Production of 148.33 lakh tonnes of foodgrains and 16.70 lakh tonnes of oilseeds has been proposed during the first year 1985-86 of the Seventh Five-Year Plan of the state. Cropwise targets of main food crops include rice 46.20 lakh tonnes, wheat 40.74 lakh tonnes, jwar 18.13 lakh tonnes, Bajra 1.14 lakh tonnes and maize 7.49 lakh tonnes.

The target for fertilizer consumption during 1985-86 has been kept at 4.56 lakh tonnes. The work of plant protection would cover a bigger area of 105 lakh hectares. Larger areas would also be brought under the high yielding varieties of rice, wheat, jwar, bajra and maize. It is proposed to bring a total of 52.58 lakh hectares under high yielding varieties in 1985-86. This includes 21 lakh ha. under rice, 18.40 lakh hectares under wheat, 10.10 lakh ha. under jwar, 0.52 lakh hectares under bajra and 2.50 lakh hectares under maize.

The programme of supply of improved seeds to cultivators would also be expanded during the first year of the Seventh Five Year Plan. It is proposed to distribute 1,49,500 quintals of cereals, 34,100 quintals seeds of pulses and 1,23,400 quintals seeds of oilseeds.

Krishi upaj mandis

With a view to providing effective marketing facilities to farmers for their produce close to their places of production, as many as 435 mandis and upmandis have been constituted in Madhya Pradesh. Arrangements have also been made to ensure payment for their produce within 24 hours. 113 mandis have been established during the last four years.

Now, the government is making arrangement for providing training to the staff and employees of mandis in various marketing operations to ensure efficient functioning of the mandis.

Efforts are also being made for the establishment of separate mandis for sale and purchase of vegetables and fruits. Meanti godowns are also being constructed along with the mandis for stocking and proper preservation of agricultural produce. A target of construction of 279 godowns with a capacity of 65,000 tonnes has been fixed. So far, 33 godowns with a capacity of 11,000 tonnes have been completed.

Our farm universities

B. Rai

Agricultural colleges have been instrumental in bringing about the Green Revolution. Now country is entering the next phase so there is need to introduce new composite courses in post-harvest technology irrigated farming agricultural financing and dry-land farming.

INDIA HAS CHANGED a difficult food situation into one that approaches near self-sufficiency. Such a feat is almost unparallelled in the annals of agricultural production. The wheat production has gone up from a mere 10.3 million tonnes in 1964-65 to 42.5 million tonnes in 1982-83 and the total food-grains production has increased from 72 3 million tonnes to 126.8 million tonnes during the same period Confident the country now plans to produce 142 million tonnes, during the current crop year. The meaningful partnership of the farmers, farm-scientists, and the purposeful leadership has made it all possible.

The new seeds and the new farm technology have basically done the job. To maintain the tempo of this progress, now 22 farm-universities have to strive hard to search new farm-knowledge, find new non-conventional farm-techniques for better utilization of the available land, labour, water and the existing input resources as also to train the required man-power for manning the scientific-farming, research work education and allied agro-sevices. Since our national economy is a primarily agriculture based, on its success, depends the survival, hope and destiny of about, 700 million people. The present article briefly describes the background, the system of education, achievements in research, the weak-links and the possible way outs for improvement of our farm-universities.

The Blackground

The first Educational Commission comprising ten outstanding educationists under the Chairmanship of Dr. S. Radhakrishnan with Dr. Zakir Husain and two American educationists Dr. A. E. Morgan and Dr. J. J. Tigert suggested the establishment of separate farm-universities in India on the 'land grant pattern of USA' in 1948. This pattern was set there in USA under the Morril Act of 1862 during the period of President Abraham Lincoln. This concept of meaning-fully integrating research, teaching and extension was put to the test under Indian conditions.

In 1956, the Govt. of India and the then Reckefeller Foundation signed a formal agreement to cooperate in maize, millet and sorghum improvement research and to develop a modern Post-Graduate School at the Indian Agricultural Research Institute at New Delhi. In January 1957, Dr. Ralph W Cummings came to India as the Director of the Indian Programme. He not only directed the Rockefeller Foundation's agricultural activities in India, but in fact served as an adviser in organizing the new agricultural universities.

The first farm university was established at Pantnagar in U.P. in 1960 on a virgin farm land covering an area around 6400 hectares. Now, there are 22 farm Universities at least one in each state, though Maharashtra has four, Uttar Pradesh has three and Bihar has two. Probably, never before. has there been such a mushrooming of farm-universities in a comparative time anywhere in the World. Under these varsities, presently there are of 88 Colleges. Out of these 88, 38 offer degree programmes in agriculture. 21 in Veterinary Science, 9 in agricultural Engineering, 8 in Home-Sciences, 7 in Basic Sciences, 2 in Fisheries and one in the field of Dairy Science.

Educational pattern

Like the land grant pattern, the educational system in these farm-varsities integrates the theory with practical and the research with the developmental needs which could ultimately help the farmers in improving their economic conditions. The academic year is divided into 2 trimesters or 2 semesters and the students have to take different sets of courses, in each trimester/semester. They have to work continuously to get their degree, they must obtain a minimum overall

grade point average by the end of the degree programme. The system provides for an 'Advisory System' for each student which helps him in choosing the set of courses and adds relevance to his chosen field of study. At the end of their degree programme, the students can choose from a number of job-oriented elective packages which later help them in choosing their jobs and performing well when they join them.

Social content

Besides providing the education, the agricultural universities have also a social content. So, they tailor their researches and extension activities specifically according to the needs of agriculture of the region in which they are located. When research becomes problem solving, a lively dialogue starts between the farmers and the farm-scientists. In recent years, large group of farmers have often flocked to the campuses of these farm-varsities during the 'farmer's fairs' or '*Krishi Vigyan Melas*' to obtain the handful of the newly developed seeds of certain varieties, and learn the new farm techniques which they later try on their farms. Perhaps, the secret of raising the farm production in India lies in this meaningful exchange of ideas and the utilisation of farm-scientist's skill.

Achievements in research

The research efforts on the cereal grain production in India have been very rewarding. It has virtually revolutioned the wheat production. Now enough wheat is being produced in states like Bihar, West-Bengal and enough rice as well is being produced in Punjab, Haryana, and Western U.P. where very little of it was produced in the past. The input responsive, dwarf wheat varieties now almost cover the whole of the Gangetic plain in a carpet like manner and have pushed up the production levels. These varieties do not lodge because of their short plant stature, are profuse tillering, have photo-period non-sensitivity, wide adaptability and also have warded off the attack of rusts which often used to take heavy toll of this major food crop. The introduction of dwarfing gene found in the rice culture *'Dee-geo-weo-gen'* in Taiwan in a number of Indian varieties, has given them the right plant type for high yield in this crop and has helped in breeding promising rice varieties like 'Jaya', 'Padma', 'Sita', 'Bala', 'Archana', 'Deepa' and a number of them. Perhaps, the characteristics of this dwarfing gene, the plant type, dwarfsize, good tillering habit, erect leaves, will long continue to dominate the characteristic of the high yielding varieties of rice in years to come, not only in India but perhaps the whole of Asia itself. Efforts are now being made to develop hybrid varieties in this crop as well.

Hybrid breeding has caught up considerably well in bajra, maize and the sorghum crops. As a result of extensive usage of World's germplasm collection of these crops, geared in multi-locational multidisciplinary team work and cooperative testing programmes, some 16 commercial hybrids were developed and released in bajra, 14 in maize and 9 in sorghum. Out of these, 9 hybrids in bajra, 8 hybrids in maize and 6 hybrids in sorghum are currently under the commercial seed production of the National Seeds Corporation. The availability of the male sterile line combined Kafir 60 in Sorghum and Tift 18A and B, Tift 23A and B lines in bajra could make the commercial hybrid seed production of these crops possible.

Good beginning has been made in producing commercial hybrids in cotton, castor-bean and the sunflower oilseed crops. But the exciting challenges are yet to be met in breeding high yielding improved varieties in grain legumes and in an array of oilseed crops to suit the specific needs of the drier zones of the country in specific cropping systems. Though, in recent years, a good beginning has been made, yet, the field remains wide-opened for these neglected group of crops to join the family of prestigious field crops as full fledged team members. Efforts are also afoot to breed dwarf varieties in bajra, castor, papaya and banana to make these crops better suited for their cultivation and for their higher performance.

Weak-links

Though, a number of monocampus farm-varsities (like the ones at Pantnagar, Ludhiana and Hissar) have obtained fairly good amount of success in operating this new system, a number of multi campus varsities have obviously run into considerable difficulties in conducting their academic programmes between the different campuses. This has considerably affected the quality of their training. The result is that the students often remain professionally half-baked, do not develop the required professional skill and the confidence for taking to self-employment in agriculture, which otherwise employ 80 per cent of the rural masses, and often run for non-challenging, bureaucratic jobs. Often, the farm research lacks relevance. It is usually conducted under the very ideal conditions of the experiment stations at a prohibitively high cost which usually becomes difficult to emulate under the farmers field conditions. The effort then eventually looses the relevance for the conditions where it is ultimately sought to be used.

The Possible wayouts

So under the existing conditions, 'On-farm tests' and 'on-farm research' could provide a very meaningful approach and a wayout in transferring the farm-technology to the farmers fields as well as involving the grass-root workers in this endeavour who have the centuries working experience of this profession. The farmers pick up what is useful quickly and assimilate it in their farming practices and what is 'irrelevant' they reject as well.

In the fields, the endeavour must be to grow two blades of grass where only one grew earlier and all this with the local resources. In agriculture curriculum, there is a felt need to develop more of the job-oriented composite courses|elective programmes, rather than giving the students discipline oriented course work as has been done in the past. The under-graduate programme in agriculture could be better treated as terminal professional programme with broad based field training|internship in agricultural production. Since, the Country is entering the next phase of the green revolution, it has now to face a number of urgent second generation problems, there is need to introduce new composite courses|elective packages in post-harvest

(Continued on page 34)

BOOK

Rural development

Rural Development Policies and Programme—A Sociological Perspective by Shiv R. Mehta. Published by Sage Publications India Pvt. Ltd., C-236, Defence Colony, New Delhi 11024. First published : 1984. Pages 192. Price Rs. 95.00.

WHILE STUDIES ON rural development seem to have become the much-beaten track, this book is surely with a refreshing contrast covering as it does themes which pertain to the socio-economic aspect of development. A highly documented work, the book throws up a number of issues for consideration of policy makers and planners. The major stance taken is that development of the 'people' should be the beginning and end of rural development in the developing nations. Rural development as a process should be continuous whereas rural development activities should be time-bound and target oriented. The author's view is that the maximum and optimum utilisation of land resources for productivity as well as accessibility of land to a larger proportion of the village population should be the central focus of rural development.

In the seven chapters of this book, topics like rural development concept, problems, social relationships, special programmes social services, impact of various programmes and fundamentals of rural development have been competently discussed, analysed and concluded for drawing suggestions. John W. Thomas of Harvard University, in his foreword to the book, has summed up the content and warns that without systems which empower people and which release their capacities and give them incentives for change, investment, technology and all the other frequently discussed elements of development are of little value.

According to the author rural development can be considered fundamental if it is related to the social, ecological, technical, value and political systems of a country, for the economic emancipation of the people and their integrated social living; otherwise it remains a fad. In his view due to social and economic differentiation in the villages for reasons of technological innovations and farm management measures, social disturbances and tensions have been generated in India's villages "This is mainly because of the vested interests of certain dominant individuals in power, party politics and political instability and unclear goals of development, international power relations and economic dependency on rich nations" An interesting remark made by the author is that the integrated rural development programme, which has now been adopted in all the blocks of the country, appears to be a misnomer. In content, it is nothing but an extension of the Antyodaya programme. It is not certain if it will help the intended beneficiaries cross the poverty line though it may provide a check on their sliding down further.

There is a useful bibliography given at the end of the book.

Navin Chandra Joshi

Mixed economy

Mixed Economy by Namjoshi, Published by Himalaya Publishing House, "Ramdoot", 12B, Dr. Bhalerao Marg, Bombay 400004. Rs. 125/-.

THE CONCEPT of Mixed Economy has come to its own, prevalent not only in country that profess to follow it, but even in the Capitalist and Communist prototypes as would be apparent to an observing eye. The book under review traces the interdisciplinary foundations of the concept in the philosophies of political economists and social thinkers and indicates the outcome through the theories of Consensus in sociology and Convergence in history. After describing the theoretical types of mixed economy, the author examines the means to provide it with substance for practices Institutional arrangements, policy goals and practices that would help in the emergence of the social economy are delineated. The author has explained the strategy for an income, prices and wage policy as pursued in Sweden through a legal framework in industrial relations and in Israel through labour controlled enterprises. The case of India beset with paradoxes on the labour, institutional and policy fronts is brought out. In addition, the relevance of the concept in the present international economic and political system is brought out. In addition, the relevance of the concept in the present international economic and political system is brought out.

This is a multidisciplinary treatise with a comprehensive coverage. Though at places the work is dialiectical and terse, it should interest not only students of economics, politics and international affairs, but even social thinkers and policy makers.

R. C. Srinivasan

Demography

Dynamics of Population & Family Welfare 1983. Editors K. Srinivasan and S. Mukerji. Published by Himalaya Publishing House. "Ramdoot", Dr. Bhalerao Marg, Bombay-400 004 Pages 425. Price : Rs. 140.

THIS BOOK IS a collection of 17 scholarly articles prepared by faculty members of and consultants to the International Institute for Population Studies (Bombay), which address a wide array of issues concerning population such as fertility, family planning,

morbidity, mortality and migration. The book under review is also the third volume of a series on population studies sponsored by the Institute, since 1979. For the first time, the book depends on the empirical findings and research based on primary data collected from various large-scale surveys undertaken by the Institute since 1981. The editors of this volume K. Srinivasan and S. Mukerji have undertaken a compendium of the 17 articles, providing a bird's eye-view of the weighty findings of the various scholars

A chapter on "computers in demography" graphically notes that the need for improving the quality of basic demographic data in developing countries has been eclipsed because of the use of computers on demography in advanced nations. They bemoan the constraints and limitations of computer use in demography, particularly for developing nations.

John Caldwell's monograph titled "In search of a theory of fertility decline for India and Sri Lanka" contends that the trigger for fertility decline noticeable in most states of India during the past decade is not due to the family planning programme but due to greater population pressure on land, the availability of employment opportunities in urban areas, etc.

Tara Kanitkar and B N. Murthy in their study on "factors associated with the use of contraceptives in Bihar and Rajasthan" note that the acceptance of family planning increased with the level of the education of husband in a family

T. K Roy and S Lahiri in their study on "recent mortality levels and differentials in India" show that the early childhood deaths continue to be fairly high compared to those prevailing in the advanced nations. In 1975, Uttar Pradesh had the highest crude death rate at 22.6 per 1,000 population. The lowest rate at 8.4 per 1,000 was in Kerala. Apart from these glimpses, the rest of the articles found in the book include international inequality and migration in the Middle East and North Africa.

The book is replete with analytical and statistical details concerning the various facets of population problem, so indispensable to demographers and planners. But for its exorbitant cost the book would definitely be a valuable addition to the vast existing literature on vital statistics in the country

G. Srinivasan.

Indo-Muslim culture

Hindu Muslim Cultural Relations : F. Mujtabai National Book Bureau, New Delhi, P.P. 144 : Rs. 90.

THE CLEAR AURA of Hindu-Muslim Cultural Relations has been often misconstrued and polluted through a mere political-cum-religious approach. Those who thought over it and had the occasion to interpret it were the inmates of our bigoted obscurantist society. Fortunately here is, in black and white, the wholesome and to the paint resultant of a research endeavour which was sponsored by the Dr. Zakir Hussain Educational and Cultural foundation and entrusted to the author having the credentials of disinterested scholar of Tehran University fully equipped with the comprehensive know-how on the subject.

The volume enshrines a number of lectures replete with details based on veritable research conducted on rare archives hitherto untouched, with the intent of striking a clear-cut way out of the existing confusion To say the least, the chapters on the "First attempt to understand AL-BERUNI", "The scope and relevance of Persian Hindu Writings", are unique and absolutely side-track the European sources which inspired only the banal approach of earlier scholars

The volume has a foreword by Shri P.V. Narasimha Rao and an introduction giving the historical backdrop. It is needless to emphasise that the scholarly style of the narrative adopted by the author is not only that of a cultural historian but also speaks volume about elequence of a man of letters.

The quality of print and production is extraordinary and so is perhaps the price of the volume

R. P. RAHI

(Continued from page 31)

technology, irrigated farming, agricultural financing, poultry, fisheries, commercial dairying and dry-land farming. Introduction of a course on 'Agriculture in Integrated Rural Development' now appears to be very encouraging

Just like Medical education, there is now also a need to encourage more of the girl students to join the professional degree in agriculture or to incorporate more of the agricultural component in their home science degree programme. This will made them more relevant to take part in the agricultural development programmes. Ultimately only through the betterment of agriculture, can India obtain self-sufficiency in food production and in the raw materials for its industries If the farmers do better, the whole country does better and eventually the business for every one improves.

Corrigendum

In Yojana, June 1—15, 1985 issue, page 21 column 1, under the sub-heading 'Safety', the following may be added after the sixth line :

"nuclear reactor failing, the fuel melting and the vola-"

—Editor

Irrigation performance looks up in sixth plan

A review of the performance during the Sixth Five Year Plan shows that the total expenditure on major, medium and minor irrigation programmes will be around Rs. 9300 crore. In addition Rs. 855 crore is expected to be spent on the command area development (CAD) Programme. An additional irrigation potential of 11 5 million hectares is expected to be achieved during the Plan period, taking the gross potential created by the end of the Sixth Plan to about 68 million hectares. Out of this, about 31 million hectares will be from major and medium and about 37 million hectares from minor irrigation schemes.

During 1984-85, a target of creating irrigation potential of 2.4 million hectares -0 85 million hectares from major and medium and 1 55 million hectares from minor irrigation has been fixed. The approved outlay for 1984-85 is about Rs. 1833 crore for major and medium irrigation, Rs. 424 crore for minor irrigation and Rs. 262 crore for Command Area Development Programme. The targets fixed for 1984-85 are expected to be substantially realised during the year.

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More power availability in 1985-86

POWER GENERATION IN the country is poised for a significant step forward with a targeted addition of 4460 MW to the installed capacity in 1985-86. This represents an increase of 1380 MW over the installed capacity added during 1984-85.

During the year, 15 thermal generating units totalling 2600 MW, 28 hydro-electric units with a capacity of 1167.5 MW, seven gas turbine generating units totalling 457 MW, and one nuclear unit of 235 MW will be installed.

The proposed target of power generation for 1985-86 is 170,000 million units. This includes 110,000 million units of thermal power, 56,000 million units of hydro-electric power and 4000 million units of nuclear power.

With a sharp increase likely in the demand for power, efforts are being made to keep the gap between demand and supply as narrow as possible. At present the shortfall between the generation of electricity and its demand is six per cent. □

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Crop insurance,
a boon !

VOL. 29 NO. 12

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JULY 1—15, 1985, RUPEES 1.50

Focus on planning
and energy

NEXT ISSUE

Focus on rura
banking

Massive programme for welfare of children and nursing mothers

OVER THE YEARS, Success in improving the health of Indian children have been chalked up in pilot projects and small-scale government programmes. But there are now signs that the government is setting in place a matrix of basic child health strategies on a scale commensurate with the problem itself.

Following successful local campaigns which have raised child immunization rates to over 80%, several State governments are now moving to immunize all children. UNICEF's regional office in New Delhi estimates that if all State Governments follow through on this commitment, then India can achieve its goal of vaccinating 85% of all infants by the year 1990.

A national code on the marketing of breast-milk substitutes is soon to become law.

A national programme to prevent disability has been launched including massive distribution of Vitamin-A to prevent blindness in children.

Government outlays on clean water and sanitation are to be about quadrupled over the next five years.

At the heart of these activities lies the massive programme for integrated child development services (ICDS), centred on the anganwadi—literally, a courtyard for child care. Each anganwadi covers a population of about 1,000 and serves simultaneously as a pre-school for children up to six, as a supplementary food centre for pregnant and nursing women and for poor children, as the focal point for children's immunization and for regular check-ups of their health, and as a centre for literacy, health and nutrition courses for mothers. Along with village health guides, the anganwadi workers—women recruited from the community and trained for several months—are the community's primarily link with the health centres and all other services for young children.

From experiments beginning ten years ago in 33 of India's 5,000 administrative 'blocks' (each with an average of 100, 000 people), the ICDS programme will be active in 1,000 blocks by mid 1985. The anganwadi workers, currently some 60,000 strong, will be organizing immunizations and check-ups for 10.3 million children, classes for 3.4 million mothers, and supplementary feeding for 6.1 million children and 1.1 million women. Another 1,000 blocks will be covered by 1990 and the programme as a whole is due to reach every poor child aged six and under by the turn of the century.

Already, the immunization rates have doubled and tripled in ICDS blocks. A survey of the children in 15 of the original project blocks has shown that severe malnutrition fell from 21.9% to 5.4% over 21 months. Among children up to three, usually the hardest group to reach, malnutrition fell from 29.2% to 6%. Even though the children in rural ICDS blocks are among the most deprived in the country, their infant mortality rate is steadily falling· a study of 200 ICDS blocks found an infant mortality rate in 1982-83 of 89 deaths per 1,000 live births in rural blocks as compared with the national figure of 124 per 1,000 in rural areas.

The current 1,000 ICDS projects cost is 0 13% of the country's gross domestic product. And the cost will still be well below 1% even when all India's children in need have been reached. □

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Crop Insurance, a boon !

K. N. Ardhanareeswaran

The new comprehensive crop insurance scheme will be effective from Kharif 1985 covering rice, wheat, millets, pulses and oil-seeds. The scheme to be operated by the General Insurance Corporation of India in collaboration with the State Governments will provide a cushion against the shock of disastrous crop losses beyond the control of farmers, says the author. He explains in the article the evolution of the scheme, what it is and how it will be implemented !

IN OUR COUNTRY, agriculture generates about 40 per cent of gross national product and gives employment to about 70 per cent of the labour force. Not only is agriculture a major contributor to the Gross National Product, it also has a major impact on the general economy of the country through the supply of essential goods and raw materials and also by creating demand and market for different industrial goods. Crop producton is a major component of the agricultural sector. Although the country has made considerable progress in agriculural production, by an large this has been confined to irrigated areas. The vast majority of our farmers who are small and marginal have benefited very little so far. These farmers are mostly in rain-fed areas. Dryland farming in the country accounts for 73 per cent of cultivated areas but contributes only 42 per cent of the total foodgrains production. As such, future of agriculture in our country would depend mainly on our ability to improve and increase agricultural production from dryland areas. Crop production in rain-fed conditions is characterised by high risk, low productivity and fluctuating yields. Dryland agriculture would involve higher investments in the form of better seeds, fertilizers, soil management and pest control. The small and marginal farmers in these areas may not be prepared to make the investments necessary for increasing production unless the insurance cover is provided to them.

Why crop insurance !

The approach paper on the 7th Five Year Plan envisages a growth rate of 5 per cent for cereals and 4 per cent for agricultural sector as a whole. This would require substantial amount of investments by the farmers, and these investments again would not come forth unless the farmer is given an insurance cover against natural calamities which affect the crop yields

Crop insurance would thus provide a cushion against the shock of disastrous crop losses beyond the control of farmers. It would help to a considerable extent is security of farm income and contribute to greater stability in general economic conditions of the rural community. It would give greater confidence to the farmers for adopting new and high cost technology. It would also improve the position of farmers in relation to agricultural credit They would not become defaulters and, therefore, ineligible for fresh credit in the event of crop failure. The crop insurance scheme would take care of the liability in such an event and the farmers would automatically become eligible for fresh loans for the new agricultural season. In this connection, it is proper to sound a note of caution. The farmers cannot expect any profit from the scheme. Crop insurance, like life insurance, is meant to provide protection against unforeseen risks.

Evolving a viable scheme !

It has been the endeavour of the Government of India since Independence to formulate a viable scheme of crop insurance in the country. Several schemes were prepared by the Government and circulated to the State Governments but they did not agree to implement any of these schemes mainly on account of paucity of financial resources. Later on, General Insurance Corporation of India in conjunction with fertilizer manufacturers tried some experimental schemes on individual basis. These schemes were, however, found to be unsuitable on account of the adverse financial results In a country of our size and dimension having very large number of farm holdings, it is rather difficult to have an individual based crop insurance scheme, firstly, on account of non-availability of statistical data and secondly, on account of the huge administrative costs involved in issuing policies, conducting crop cutting experiments and settling claims. As such after considerable thought, it has been found that the only solution would be an area-based crop insurance scheme.

With this view in end, an area-based scheme was formulated by the General Insurance Corporation of India in 1979 which has been in operation since then with the collaboration of the State Governments.

The scheme was linked with crop loans advanced by the financial institutions and if the yields of the homogenous area fell below the guaranteed yield, the farmers would be compensated proportionately. The experimental scheme has been a success and 12 State Governments had adopted the scheme.

The scheme that came about !

In order to provide a measure of financial support in the event of crop failures as a result of drought, flood, pest attack, hail strom or any other calamity; to restore credit eligibility to the farmers after a crop failure for the next season and to support and stimulate production of cereals, pulses, and oilseeds, the Central Government has recently decided to introduce a country-wide comprehensive scheme of crop insurance commencing from Kharif 1985. The scheme will be operated through the General Insurance Corporation of India with the active involvement of the State Governments.

The scheme will be linked with crop loans availed by the farmers from co-operative credit institutions, commercial banks and regional rural banks There would be built-in insurance cover in all the crop loans. Initially, rice, wheat, millets, oilseeds and pulses would be covered. The charges of built-in insurance cover would be 2 per cent of the sum insured for rice, wheat and millets and 1 per cent of the sum insured for oilseeds for pulses. The sum insured per farmer shall be 150 per cent of the loan sanctioned to him for growing these crops. The insurance charge, that is, the premium will be calculated on the sum insured and this will be an additionality to the scale of finance in respect of a particular crop. The scheme would operate in all such defined areas in the country in respect of which statistical data for crop yield are available for the last 5 years. The homogenous area under the scheme world be a block.

Under the crop insurance scheme, if the actual yield per hectare of the insured crop for the defined area (determined on the basis of crop cutting experiments in the insured season) fell short of specified threshold yield, all the farmers growing that crop in the defined area would be deemed to have suffered shortfall in their respective yield and all such farmers would be compensated.

How implemented !

For the implementation of the scheme, General Insurance Corporation of India will act as a leading insurer and will establish crop insurance cells at the State capitals for maintaining close and constant liaison with the State Governments. Reserve Bank of India, National Bank for Agriculture and Rural Development, State Cooperative Banks, Commercial Banks and Regional Rural Banks.

The State Governments will set up Crop Insurance Funds with an initial corpus of 1 and 2 crore rupees to be contributed equally by the State Governments and the Central Government. The State Crop Insurance Fund will be administered by a high level committee headed by the Chief Secretary of the State Government. The Committee will also constantly review and monitor the scheme as well as devise ways and means of co-ordination among the various departments of the State Government for successful implementation of the scheme.

It has been decided that in respect of insurance charge payable by small and marginal farmers, 50 per cent of the insurance charge (premium) would be subsidised to be shared equally by the Central and the State Governments. The premium amount will be collected by the financial institutions while sanctioning the crop loans to the farmers and the collected premium amount would be sent with the details of area, sum insured, to the General Insurance Corporation of India which would issue a master policy in the name of such financial institutions.

The liability of the Central Government on account of subsidy to small and marginal farmers during 1985-86 would be about Rs .4.50 crores and an equal amount would be the liability of the State Governments. The losses in excess of the premium collected would depend on the weather conditions and other factors and as such it is difficult to indicate a firm figure.

Within one month after crop cutting experiments of each insured crop, the State Government would furnish to General Insurance Corporation of India the data for each stratum. On receipt of the data

(Continued on Page16)

Why decentralize planning !

Dr. G. P. Khare

As far as our planning goes, a lot of thinking has been done about the formulation of plans, but implementation, monitoring and evaluation are the weak links in our planning structure, points out the author. He feels if district schemes became the responsibility of the District Planning Boards, the implementation of the schemes would definitely improve. The people for whose benefit these schemes are taken will feel more involved.

PLANNING PROCESS IMPLIES an economic and efficient management right from the initiation to the fruition stage. A project will be of real maximum benefit to the people only when it has been formulated properly and implemented carefully as also maintained regularly during its life-time. This is rendered possible only if there is a regular flow of necessary statistical information and a regular communication between the local authorities and the decision makers.

For the formulation of a project not only detailed statistical background data are needed but it has also to be ascertained how the local population reacts and how far they are prepared to accept a certain Project. If the people are taken into confidence, the scheme is discussed with them in all details, its implications are commuicated to them and they are told about various costs and advantages accruing to them. an atmosphere is created in which they are prepared to take over the management after the construction work is over. A healthy discussion on the pros and cons is desirable. If the local population is involved, there would be less wastage and the advantages will begin flowing to the people with the minimum time-lag and the minimum amount of difficulty. Decentralisation, therefore, seems to be very essential especially in respect of social welfare schemes and those in which a few villages and a limited population are involved.

Earlier attempts

Our planners recognised the importance of decentralised planning right from the beginning and this problem has been discussed in almost all the Five Year Plans formulated so far. The basics of a local horizontal plan were discussed in the second plan, while the third plan gave detailed methodology of rural development plans at district and block levels. In 1969 guidelines for district planning were issued by the Planning Commission. However, it was felt that states lacked capabilities and adequate planning machinery even at State level and they could not possibly take up district planning in all seriousness at that stage. Hence the Planning Commission launched a scheme for strengthening the planning machinery at State level in 1972 and it was thought that once the State planning machinery was set up, the district planning could be taken up as the second stage of decentralised planning. Looking at the conditions prevailing at the beginning of planning era it was felt that it was necessary to concentrate on the agricultural and industrial development of the country so that the pace of economic development and prosperity could be accelerated. Hence the top-down approach was accepted by our planners and the planning and decision-making function remained centralised.

A number of special area programmes were adopted during the Fifth Five Year Plan with a view to providing basic minimum needs to the rural population. As the programmes progressed, the need for decentralisation was felt more and more. Therefore, a working group was set up in 1977 to prepare guidelines for block level planning. Another committee or Panchayati Raj was appointed towards the end of 1977. The reports of these committees were submitted to Government in 1978, but nothing

spectacular came out and no machinery was established to said any decentralised planning.

Working group on district planning

During the Sixth Plan concrete steps were taken in the country. A central scheme of strengthening the planning machinery at the district level on sharing basis was launched. Some training programmes on District and Block level Planning were organised and the procedures to be followed for affecting functional, financial and administrative decentralisation to the districts were communicated to the States. A working group on district planning was set up in September, 1982 to study decentralised planning in all details. It was expected that the working group would come out with recommendations on organisational frame work, methodology, division of responsibility at different levels and other operational problems connected with decentralised planning.

Recommendations

The working group set up several sub-groups to go into specific issues connected with district planning. Four regional workshops were also held to take note of prevailing conditions in various States and to take advantage of their experiences as far as district planning was concerned. Ultimately the working group submitted its report in May, 1984. Besides giving an account of the status of district plans in various States, the working group has made suggestions on various facets of district planning. It recommends that the State Plan should have two-fold classification, one dealing with district plans and the other with state plan, but the dichotomy should not be very rigid. In case there is a conflict of interest on account of financial or other constraints, the national and state schemes should have priority over the district scheme. As far as the allocation of outlays is concerned, it has been suggested that the states should evolve their own formula by giving due weightage to population, area and level of development. Similarly a formula may be worked out for distribution between various blocks inside the district. Just as district imbalances have to be reduced, the reduction of intra-district imbalances should be primary consideration for the allocation of resources to different blocks inside the district. The working group suggested that the District Planning Board should have complete autonomy in respect of district schemes which beneficiary-oriented or which deal with area development. In its report the working group suggests that the main functions of the District Planning Board should be :—

- Crystallisation of local needs and objectives,
- Taking stock of the natural and human endowments.
- Listing and mapping of amenities
- Formulaion of district plans
- Formulation of policies, programmes and priorities,
- Coordinated implementation, and
- Monitoring and review of the implementation of district plans and programmes.

It has been suggested that a permanent cell should be created to take care of technical aspect of the district planning and it should have a planning officer as its head. The officer should be assisted by experts drawn from various disciplines such as, economics, statistics, agronomy, cartography, economic geography engineering, sociology, banking, agriculture, animal husbandry, horticulture, etc. The actual size and composition of the cell should be determined on the basis of the needs and work-load of the district.

Discussing the imperatives for the decentralisation of planning, the working group's report summarises the benefits that are likely to come out of district planning in the following words:—

"Decentralisation enables a better perception of the needs of local areas, makes better informed decision making possible, gives people a greater voice in decision concerning their development and welfare, serves to achieve better coordination and integration among programmes, enables the felt needs of the people to be taken in account, ensures effective participation of the people, serves to build up a measure of self reliance and enables better exploitation of local resources and growth potentials of the local area for improving productivity and increasing production."

Existing district planning units

The working group on District Planning points out in its report that district planning units exist in most of the States in one form or the other. The report points out 9 types of nomenclatures as given in the following table :—

Table 1: Planning Machinery at the District Level

Name given in the apex Planning Body at District Level	States which have this bodies
1. District Planning Board	Gujarat, Madhya Pradesh, Meghalaya, Nagaland, Punjab
2. District Planning Committee	Manipur, Rajasthan, Sikkim,
3 District Planning Council	Karnataka
4 Zila Development Board	Andhra Pradesh
5. District Development Committee	Assam, Himachal Pradesh
6. District Development Board	Jammu & Kashmir, Orissa
7. District Development Council	Kerala, Tamil Nadu
8. District Planning and Development Council	Maharashtra, Bihar
9. District Planning and Monitoring Committee	Uttar Pradesh

Composition

The composition of the planning bodies differs from state to state. The report identifies the following 4 patterns :—

(i) The Minister Chairman Model: Where a Minister of State Government is Chairman of the body. This obtains in Gujarat, Maharashtra, U. P. and Bihar.

(ii) The Deputy Commissioner/District Collector Chairman Model. Where the Deputy Commissioner or District Collector is the Chairman of this body. This pattern is prevalent in Assam, Himachal Predsh, Jammu & Kashmir, Karnataka Kerala, Manipur, Nagaland, Orissa, Punjab, Rajasthan, Tamil Nadu and West Bengal.

(iii) The Non-official Chairman Model: This is prevalent in two states, viz. Madhya Pradesh and Meghalaya In Madhya Pradesh the Chaiman is nominated by the State Government from out of the three prominent social workers nominated to the District Planning Boards.

(iv) The M L. A Chairman Model: This is prevalent only in Sikkim where one of the MLA is made the Chairman of the District Planning Committee on a rotation basis.

In almost all the district planning units there are official as well as non-official members. Representation is given to the elected members of the legislature and parliament as also the members of Zila Parishads and Panchayats. The development officers at the district level are the members of the District Planning Boards. On account of such representation the District Planning Bodies are quite large in size and therefore to carry out day-to day business many states have a standing committee which identifies problems, proposes inter sectoral and intra-sectoral transfers and supervises budgetary allocation and expenditure.

Functions

Functions of the District Planning Boards differ from state to state. However, the common functions appear to be co-ordination, monitoring, review, finalisation of annual and five year plans and data feeding to the higher level.

The way the District Planning Boards function is also diverse. Usually after the State budget is approved by the assembly different heads of departments prepare district-wise breakups of the plan allocation made to them. On the basis of these allocations district plans are prepared which are just aggregation of departmental schemes. In case of those states where discretionary funds are placed at the disposal of District Planning Boards, the Boards have almost complete autonomy in preparing district plans in respect of those funds.

Different States have experimented with new methods at district level planning. The States of Maharashtra, Gujarat, U.P., Jammu and Kashmir and Karnataka have tried different formula in the allocation of plan funds to districts. In Andhra Pradesh the experiment of inventorisation of resources-related problems and potentialities using interpretation of aerial photos and remote sensing techniques has been tried in 4 districts and it is proposed to formulate perspective and operational plans for these districts with the help of these experiments. Gujarat has undertaken cartographic analysis and the preparation of district atlases. Kerala has attempted a pilot district planning project for one district and on the basis of that has prepared guidelines for district planning. In Madhya Pradesh a village information system has been developed and a perspective plan for the predominantly tribal district of Bastar has been prepared

Administration

Discussing the administrative problems of district planning the report recognises 4 important aspects which have to be looked into for smooth functioning of the district plan. These are :—

— Setting up of appropriate mechanism for coordination and implementation of the plan,
— introducing procedural innovations for the release of funds,
— establishing suitable procedure for the dovetailing of district plan with the sectoral outlays at the State level,
— establishment of procedure for monitoring and review of schemes.

Multiplicity of agencies

At present there are different planning agencies, e.g., DRDA, ITDP, CADA IRDA, etc functioning at district level. Various departments like Industries Agriculture, Labour, etc. have their own programmes for the district. At times there is a lot of wastage of resources and duplication on account of lack of proper co-ordination. District Planning Boards can step in and coordinate. This will definitely lead to the fulfilment of targets and achievement of the real purpose behind various schemes.

Present status and future programme

What has so far happened in the States is the establishment of District Planning Boards or District Development Councils. Barring a few Boards these do not have much administrative or financial powers. The result is that the decision-making and planning functions rest somewhere else and these Boards work as advisory bodies only. This situation, though not an ideal one, has helped states in gaining enough useful experience in district planning. Now with the help of their own experience and the suggestions made by

the working group on district planning they are in a better position to take up district planning in right earnest.

Probably a stage has now been reached when the Centre, States and Districts should have well defined areas of jurisdiction as far as planning work is concerned. The classification is to be flexible so that no conflict arises and at the same time specific needs of the people are met.

The decentralisation of administration and financial powers will go a long way in accelerating the rate of economic growth of districts. It will at the same time ensure the welfare of the majorty of the population by taking up suitable measures for redistributing the wealth and creating job opportunity for the local population.

As far as our planning goes, a lot of thinking has been done about the formulation of plans, but implementation, monitoring and evaluation are weak links in our planning structure. If district schemes become the responsibiliy of the District Planning Board and these Boards begin functioning effectively, the implementation of the schemes shall definitely improve because the people for whose benefit scheme have been taken up will be at the spot and they will be able to watch the progress of the schemes in operation. The local population is in a better position to monitor and evaluate them provided necessary expertise is provided by the local officers working in the district planning cell, or in academic institutions and voluntary and research organisations.

Several beneficiary-oriented, poverty alleviation and area development programmes have been in operation since the Fifth Plan. These programmes have been organised independently and in isolation to some extent. This results in duplication of work, over-staffing and a certain amount of wastage which could be avoided if district planning boards were to coordinate these and they were entrusted with the responsibility of looking after them.

It has been observed that in various employment generating programmes people are trained in conventional skills without determining their inherent aptitude or looking into the local needs and resources. But the training should be realistic and practical and it should take local conditions into account, then alone it can solve the problem of unemployment. Additional help will, of course, be needed in providing raw material and organising marketing of finishing products. This would be managed well if District Planning Boards are fully active and operational. As a matter of fact all district planning activities should come under one umbrella and they should be managed by a single authority, viz., District Planning Board.

Administrative and financial powers

In order to get work done and to get desirable results, it is essential that District Planning Boards should enjoy autonomy so that they can take quick decision and put the schemes in operation without undue delay. At the same time enough expertise should be at their disposal so that they are properly advised about the feasibility, practicability, and usefulness of different plan schemes. Not only that, experts should be able to monitor the progress and suggest corrective measures as and when needed. Generally, the administrative rigmaroles prove stumbling blocks and many good scheme may never see the light of the day unless they have been conceived and proposed within the existing administrative framework. For this purpose the Board should have adequate administrative support, but the staff for this purpose should consist of sincere and devoted workers who should be able to iron out difficulties and speed up the progress rather than get lost into administrative labyrinth.

Time schedule of work

Inspite of long experience in planning, many steps have not been streamlined so far. No specific time limits have been fixed even for the regular routine work. Even in respect of annual plans which are a regular feature now, various departments and agencies involved start thinking of the next year plan only when they receive a letter from the Planning Commission. They should take action well in advance and get necessary sanctions and approvals so that they are able to put up a realistic plan rather than waiting till the last minute and producing their plan in a haphazard way which is either too ambitious or has its targets fixed too low.

It is very essential that the District Planning Boards should lay down a time table for their regular exercises so that the plans are prepared in time and they are discussed, finalised and necessary formalities completed before the beginning of the next financial year. Not only that even for other schemes there should be a well defined time-schedule so that necessary formalities are gone through and they are completed in time. It may be pointed out that many schemes become too expensive on account of the fact that they are unduly delayed. The cost over runs so caused disturb the entire schemes of things, priorities get distorted, financial resources get depleted and many useful schemes have to be unnecessarily postponed or abandoned. People also get dissatisfied because they are not able to get advantage of the schemes since they have not been completely finished and many ancillary parts are left out. Schools without buildings or teachers, roads without bridges, irrigational dams without canals, hospitals without doctors and equipment are too painful experience to be repeated. If the plans are formulated and implemented within a proper time-frame and different steps are completed in time, such problems can be easily avoided.

Planning retreating from challenges !

Prabhat Kumar Singh

Describing the pitfalls of Indian planning in terms of failures galore, the author calls for changing norms of our planning from statistical to observational base to be realistic in its targets and achievements. This would require an educational and moral revolution to create a complete confidence in the system of planning and its social impact. "We need some sort of structural changes in social and political fields. This needs a strong political will and motivation and for this, the vested interests in politics should be done away with," says the author.

THE PRESENT CENTURY has witnessed a strange spectacle of increasing affluence in a few development countries and the rampant poverty in the developing countries where a majority of the world population resides. Yet strangely enough, in most of these countries, even after more than two or three decades of planned economic development, a precious little has been done to improve the living conditions of the large proportion of the population. In spite of massive investment undertaken in the work of planning during such a long period, large population in developing India is subjected to the grim and grave conditions of poverty, with each day being a hard struggle for survival. Apart from the failure of planning to create an autonomous self propelling and dynamic economy, the slow growth in per capita income combined with a tremendous rise in living cost has tended to push many people below the poverty line.

India which once gave a lead to the entire world in the matters of both civilisation and culture was subjected to a long period of foreign slavery and subjugation. Within a period of four years after gaining independence, she launched her First Five Year Plan (1951-56) and has by now completed over 37 years of planned economic development. It is a serious comment on our planning strategy that in spite of massive development plans and projects, the economic status of a vast majority of Indian teeming millions has drastically been deteriorated.

The pitfalls of the Indian Planning are : Poverty, public sector, negative impact of foreign debt, deficit financing, increasing prices, generation of black money, statistical norms etc.

Poverty

In almost all the Five Year Plans, the Planning Commissission has repeatedly announced the twin goals of economic development, i.e. removal of poverty and attainment of self-reliance. The slogan of the removal of poverty has proved to be futile and like a sweet dream for the Indians which is not going to be realised in any way. The dragon of dire poverty, instead of being cowed down, went on taking a colossal shape from the very beginning of our plans. It is estimated that the total Indian population below the poverty line in 1984-85 is 50 per cent having a consumption of Rs. 47.10 per month. It was 30 per cent and 45 per cent in 1960-61 and 1970-71 respectively. That shows that poverty has been increasing fast. By the year 2000, below the poverty line population would be equal to that of the year of freedom 1947. Because of imbalanced economic development this poverty line varies from state to state very significantly, having the maximum of it from 60 per cent to 66.40 per cent in Orissa, Bihar and Madhya Pradesh and the

minimum of it in Punjab having 15 per cent population below the poverty line.

TABLE A—Showing quantum of poverty in various States.

State	Poverty line (in percentage)
Orissa	66.40%
Bihar, Madhya Pradesh and Tripura	57—60%
Assam, Uttar Pradesh and West Bengal	50—53%
Rajasthan	34%
Himachal Pradesh	27%
Haryana	25%
Punjab	15%

Socio-economic transformation

It is a well known historical fact that economic development of a nation is associated with a shift in relative importance from consumer goods to capital goods. Though the agricultural and industrial production is growing considerably at a satisfactory rate, it has created some sort of confusion, as the national income has been growing very slow. India is still not self-sufficient in agricultural production as well as in industrial production. At the end of the Sixth Five Year Plan, we got the target of agricultural production about 154 million tons with 4.5 per cent increase and industrial production with 7.0 per cent p.a. but in this period, the national income grew 3 per cent p.a. peculiarly in spite of agricultural and industrial production are increasing with a higher rate. The following table shows the trends of increment in the national income, agricultural production and industrial production:

TABLE—B Showing rate of increment in national income, Agricultural and Industrial production.

Period	National Income	Production	
		Agricultural	Industrial
1951—56	3 6	4.1	7 3
1956—61	4.0	4.0	6.6
1966—69	4.0	6.2	2 0
1969—74	3 3	2.9	4 7
1974—79	5.4	4.2	5.9
1980—85	3.0	4.5	7.0

So the socio-economic transformation in India since independence has been going adversely to the planning objectives. That is the reason why the tyranny of wealth has been more pinching and powerful In spite of all this, the distribution of income and wealth is odd one. Presently in India, 70 per cent the total population shares 7 per cent to 8 per cent of the total personal income of the nation and, besides this, the top 20 per cent poulation is sharing 45 to 48 per cent of the total personal income. It has been said by the Government from time to time that the licencing and industrial policies are framed in such a manner that concentration of wealth in a few hands will not result to the detriment of common good but presently it does not appear to be successful. Assets of the top 20 iddustrialists in 1981 were Rs. 8,987.02 crore having 30 per cent annual growth in assets. This was summed up in 1972 to Rs. 2883.69 crores.

Public sector

In the second plan statement, it was clearly stated that the entire responsibility of economic development would be on the public sector but since then despite a few sectors the public sector proved totally unsuccessful in economic as well as social fields. The latest evidence of poor performance has come through the sharp decline in the profits earned by the central public undertakings during 1983-84. The major groups, namely, steel, coal and textiles accounted for heavy losses of Rs. 872 crore in 1983-84 against Rs. 192 crore in the preceding year. That means an increase of 350 per cent in their losses. There are 600 public sector undertakings (including those managed by State Government) having 34,000 crore investment. In 1983-84, Central public undertakings (193 units) earned a profit of Rs. 32 crore as against Rs. 618 crore in the previous year (by 188 units). It is noticeable that if these public undertakings have a profit of only 10 per cent on total investment (34000 crore) it can compensate the government budget deficit (i.e. Rs. 3349 crores).

Negative impact of foreign debt

Presently India has the income saving ratio as 16 per cent and capital output ratio as 8 per cent which means Indian economy has become the high cost bearing economy. The major cause of this vicious position is the mounting up of foreign debts. The total current burden of the foreign debts is approximately Rs. 23,000 crores on India for which she has to pay Rs. 418 crores as interest p.a. In 1983, the debt service ratio was 14 per cent which is likely to go to 20 per cent by 1988-89. That means the position of interest and repayment of principal is going to be bad. Thus, the foreign aid has totally a negative impact on the Indian planning. The following table shows the debt burden of economy :

TABLE C—*Total debt burden*

Year	Rs. (in crores)	Interest (Rs. crores)
1984-85	1,500	418
1985-86	3,500	900
1989-90	5,500	1,500

The position of trade deficit is getting deteriorated from year to year and we are not able to stop it even after 37 years of independence. The following table shows the position of the trade deficit :

TABLE D—Showing Trade Deficit of India

Year	Import	Export	Trade Deficit
1950-51	650 54	600.64	—49.57
1960-61	1139.69	660.22	—479.47
1970-71	1134.20	1535.16	—99.04
1980-81	12523.91	6710.71	—5613.20
1983-84	15387.30	9396.20	—5961.10
1984-85	16000.00	10000.00	—6000

It is expected that in the near future there is no hope of recovering from this position because of less

production and increased demand in the country. Huge trade deficit does not allow the foreign debt payments in time.

Deficit financing and increasing prices

According to Keynesian theory the deficit financing was adopted in order to raise the investment and production level and employment opportunities. But unfortunately this proved unfertile in India and became the root cause for inflation and increasing pricing. Presently, 20 per cent more money is being supplied by government without equitable production which generates about 9 per cent inflation per year. Sixth Plan deficit financing was likely to be Rs. 24,000 crore which is expected to be raised up to Rs. 40,000 crore in the Seventh Plan. Basically, inflation and deficit financing are more responsible for the rising prices The price rise on the basis of averages worked out to Rs. 7.9 per cent for the whole year. In India, the inflation is not due to credit expansion in India but it is the result of misuse and wastage of money.

Miscellaneous

Black money to the extent of Rs. 50,000 crore with the tremendous velocity of circulation accrued deep concentration of wealth in a few hands in alliance with power growth. It is very difficult to say that white money is working on black money and vice versa. Infrastructural gaps and technological confusion further lead to economic deterioration Role of multi-national corporations with political interference in economic development is questionable. Ecological losses on account of large scale environment pollution, forest cover dropping down to 8 per cent, 44 per cent cultivable land still struggling for irrigation facilities are valuable burning questions which put a question mark on our planning.

Conclusions

After the passing of a long time, Indian Planning is standing on a double edged sword where it still throws a challenge against poverty, self-reliance and economic growth with stability. It has some bitter experience throughout the planning session which puts a question mark on the utility of planning But the situation is not so serious that it is incurable. We can have an example of China. Upto 1944, China was badly suffering from economic as well as social setbacks and problems. The population was addicted to opium taking. But then they woke up from lethargy and determined socially as well as politically for development. They created a social impact of planning in the minds of the people In India, therefore, an educational and moral revolution is very much needed which can create a complete confidence in the planning system. In other words, we need some sort of structural changes in social and political fields. This needs a strong political will and motivation and for this, the vested interests in politics should be done away with.

It has been generally said that the basic philosophy of the Indian planning is very ideal but this is not so at the deeper level. In fact, it is rather weak without an ideal as the common man and politician both are not going on to sacrifice their vested interests. Thus, there is a need to create a tendency of setting some ideal examples by politician before the common man The norms of planning should be fixed on the basis of the observational norms rather than the statistical norms i.e. when we know that when our entire planning is disrupted by drought or some other natural calamities in no time, why we should not go for more and more irrigational facilities and thus the government should primarily provide infrasstructural facilities for agriculture as well as for industry. The next problem of the Indian planning has been that of distribution. Here, once again we lag behind the basic philosophy. Basically, we should first think in terms of production not of the distribution. Let the cake of production be grown more and more in size. For this every man should be prepared and developed as an enthusiastic entrepreneur through better education and technical training in order to provide food for the hungry and cloth for the naked.

Both democracy and capitalistic society are contradictory to each other. This is the fundamental factor which we have been trying to falsify for the last thirtyseven years. For the success of planning in the real sense, we have to adopt certain norms such as the equity capital of the major private enterprises can be transferred to labours of those enterprises at the market value. This will enable us to remove industrial concentration and financial imbalance.

Lastly, it can be said if we can remove all above problems and determine socially as well as politically, there is no reason why we are not able to lead the entire world both culturally and economically. □

Steps to reduce transmission losses

The Government has taken stern measures to check electricity transmission and distribution losses in the country. It has recommended organizing of surprise raids and launching of prosecution against persons found indulging in pilferage of energy.

Sub-transmission and distribution systems will be strengthened. This includes relocation of existing distribution sub-stations closer to the load centres and reduction of length of sub-transmission and distribution lines.

In India, the transmission and distribution losses on the whole are in the range of 20-21 per cent.

Seventh Plan—the thrust needed !

B. Misra

The author, in the article, reviews the basic approach of the Seventh Five Year Plan and says that poverty cannot be eradicated by giving reliefs, but by creating productive employment opportunities. Moreover, as poverty originates in villages, the focus of attention should be shifted from urban areas to the rural areas, especially to agriculture.

THE SEVENTH PLAN IS now in the formative stage. It is likely to undergo some changes under the recently reconstituted Planning Commission. However, the Approach Paper gives only some broad indications of the pattern of development which is more or less unassailable. We cannot only think of growth nor only of social justice. In the fifties and sixties, growth was given highest importance on the assumption that the benefits of growth will 'tickle down' to different sections of the community. Since the benefits did not 'trickle down', poverty eradication programmes were built into the planning system in order to improve the economic wellbeing of the poorer sections of the community. But these programmes did not materially improve the situation, firstly because these were mostly relief operations. Where poverty is colossal, relief operations cannot touch the fringe of the problem. On the other hand, they will impoverish the nation. Secondly, all these poverty eradication programmes like NREP, RLEGP and IADP did not create assets; they only transferred assets from one section of the community to another. Such programmes did not therefore create any multiplier or spread effect.

Poverty removal, not by relief

The planning programmes of last several years have taught us two important lessons. Poverty cannot be eradicated by relief. We will have to remove poverty through creation of productive employment opportunities. Productive employment will generate growth, create assets and thus ameliorate the economic condition of the poor and destitute who will be engaged in such pursuit. At the same time growth through productive employment will create a multiplier effect for bringing about a change in the economic scene. Secondly, it is also seen that poverty originates in villages and when it cannot be contained there, it overflows to towns and cities in the form of slum dwellers. This clearly illustrates that if we have to eradicate poverty, the focus of attention should be shifted from the urban areas to rural areas.

It seems to us that the Approach Paper of the Seventh Plan has taken these two factors into account while formulating the major objectives of the Plan. The major objectives of the Seventh Plan are : Food, Work and productivity. The rationale of these objectives are examined below.

Per capita food intake stagnating!

Let us take the question of food first. There has been tremendous improvement in food production during recent years. Beginning from 100 m. tonnes (plus —5 m tons) in 1970, food production increased to 130 m tonnes (plus —5 m tons) in 1960. In the year 1983-84, food production increased to 15 m tonnes. The trend of foodgrains production increasing from less than 3 per cent to above 4.5 per cent in terms of gross output is indeed significant. All the same the target of food production has been estimated at 5 per cent for the Seventh Plan. Several reasons can be attributed to

this. Inspite of the increase in foodgrains production, per capita availability of foodgrains in India has remained stagnant for a long time and needs improvement for welfare considerations. Secondly, the Seventh Plan goal of greater equity and reducing poverty will result in greater demand for food, as the elasticity of demand for food is very high in the low income group.

Reduce prices of essential items !

It may also be mentioned here that without a decrease in price of foodgrains, the poor people cannot afford to purchase the required amount of food to maintain their livelihood. Those who do not have or those who are net purchasers of food, they can only benefit by a reduction of price of essential commodities like food. But in case of India, prices have been rising since the Second Five Year Plan. This goes against the principle of equity. If we take only the last decade, we find that during the period 1970-71 to December 1983, the index (1960=100) of all India consumer prices has gone up from 184 to 559 and the food index from 195 to 631. This has produced a disastrous effect on the poor and has vitiated the equity measures pursued by the Government of India.

Another reason why high priority has been given to food production is to attain self-sufficiency in foodgrains. By the end of the century, our population may go up to 950 million to 1000 million. The Planning Commission has estimated that food requirement per capita is about 125 to 130 kg. per year. We also require some seeds and some surplus for export. This implies that we have to increase foodgrains production to the extent of about 250 m tonnes or 100 m tonnes more than what we are producing today. This is not difficult in the sense that we have now the technology to cope with the requirements. In the eastern region, there is a big gap between the potential and the actual. The new technology is utilised only to the extent of 25 to 30 per cent. That is why the Planning Commission has laid stress on increasing foodgrains production among the less developed regions and small and marginal farmers. For this purpose, eastern region in particular and some parts of central and southern India have been identified.

Generate more employment !

The second thrust is to increase work potential. As has already been pointed out, generation of gainful and productive employment is essential to reduce poverty and improve the economic wellbeing of the poor It is estimated that at the end of 1983-84, there was a backlog of about 20 million unemployed persons in the country. At least 5 to 6 million people are being added on to the employment market each year and the organised (including small scale industry) sector of industry is hardly in a portion to absorb about 1.0 to 1.2 million persons a year. Unemployment situation is therefore grave and calls for immediate action. Thus generating greater employment for gainful activities has been given highest priority in the Seventh Plan. In the earlier plans employment has been treated at most as an end product of a production profile. In the Seventh Plan a positive policy of employment generation has been aimed at.

For this purpose, great emphasis has been laid on the growth of agriculture, specially among less developed regions and small and marginal farmers through irrigation and cropping intensity which are expected to generate significantly larger employment opportunities. The agricultural growth is estimated at 4 per cent per year. Though the long-term annual growth of agriculture has been of the order of 2.7 per cent, during the Sixth Plan, a growth rate of 3.9 per cent has already been achieved. Therefore, an increase in gross irrigated area to the extent of around 20 million hectares and an increase in fertilizer production to the extent of 4.3 million tonnes could easily increase the rate of growth to 4 per cent. The agricultural target does not therefore seem to be ambitious. But what is more important is that agricultural development will increase employment potential to a considerable extent. A Technical Note on the Sixth Plan in India (1980—85) estimates that employment-investment ratio (in terms of person years per million rupees) varies from 0.024 in the Real Estate Business to 115.625 in the construction sector with the ratios for agriculture and manufacturing sectors being 44.73 and 12.62 respectively. Investment in agriculture to the extent of 18 percent of total outlay in the public sector will definitely add substantial employment. We will rather propose to increase outlay in agriculture to the extent of 36 per cent to increase employment opportunities.

Further increase in intensity of cropping will increase employment opportunities to a considerable extent. In Japan, Taiwan and South Korea, the number of persons profitably employed per hectare of land is twice as much as in India. The present intensity of farming in India is about 1.22. If we can increase the intensity to 1.5, unemployment problem will be marginal. In Punjab and Haryana, unemployment is marginal due to increase in intensity of farming by increasing irrigation facility with supporting credit and institutional facilities and other inputs. Improvement in agriculture supported by other labour intensive industries and other anti-poverty and rural development programmes like IRDP, NREP, etc. and massive construction and reforestation activity are expected to generate additional employment of the order of 40 million standard persons per year.

Reduce capital-output ratio!

Finally we come to productivity. The capital output ratio is quite high. It is 5.65 or 6 to one The Seventh

Plan proposes to reduce it to 5.04 to one. The high capital-output ratio necessitates increased investment But there is plenty of scope for reducing capital-output ratio. For example, labour cost in India is 10 to 12 per cent of that in the highly developing countries of the world and the lower cost of production has been achieved due to low labour wages in countries like Japan in earlier decades and at present times in South Korea and China.

Many things can be done to improve efficiency. One is to increase the productivity of agriculture. In agricultural sector, the rate of production per hectare in India is as low as 0.9 tonne as against 2 5 to 4 tonnes per hectare in other agricultural-cum-industrial countries. We can atleast increase the productivity in agriculture in the country as a whole to atleast 1.8 to 2 tonnes per hectare—the level already achieved in some parts of the country through instruments of policy and supply of inputs like fertilizers and other modern inputs.

Again, apart from technological choice, other related matters like proper management of projects, operational efficiency and complementary investments to have better utilisation of capacity would bring down the ICOR For example, in the power sector, it is possible to increase the Plant load factor from 48 per cent as at present to 55 per cent as achieved earlier by providing a marginal complementary investment Similarly it would be possible to reduce ICOR for about 50 per cent of the items This coupled with a shift of emphasis in favour of agricultural development would not only help bring down ICOR but also generate relatively more employment

Increasing poverty !

Inspite of all these, poverty cannot be eradicated so soon According to a recent estimate of the Planning Commission, the population in poverty is increasing by about 4 million a year. A study of Montek Ahluwalia shows that population in poverty increases by 5 million every year. The Approach Paper projections indicate that poverty level would reduce to 10 per cent by 1994-95. There has been a great deal of controversy regarding the success of poverty eradication programmes of the Government The Mid-term Appraisal of the Planning Commission claimed that poverty ratio has come down from 51.1 to 41.5 and the total number of persons below poverty from 339 millions to 282 millions in 1981-82 This claim has been disputed by many including Prof Rajkrishna, Sundaram and Tendulkar

Whether poverty has been reduced or not, we have to wrestle with this problem for a long time. The Approach Paper lays great stress on NREP, RLEGP and IRDP to improve the economic well being of the poor by creating rural employment. These programmes have been criticised on several counts. For example, it is said that identification of beneficiaries is very often faulty. Secondly, these are individual beneficiary oriented programmes and not group development programmes. And in these programmes, there is quite a great deal of leakage. Thirdly, there is no proper monitoring or evaluation of these programmes. Fourthly, these programmes do not create assets but only transfer assets and therefore vested interests have grown in perpetuating such programmes. And so on. The Approach Paper suggests to improve these programmes with better planning, closer monitoring and tighter organisation for effective implementation. Backward and forward linkages will be fully provided so that beneficiaries are able to make full use of the assistance. The IRDPs which are now largely individual-oriented will, whenever necessary, be given a wider base through the organisation of the beneficiaries into clusters or groups in order to improve the viability of the programmes. These programmes will be integrated with agricultural and rural development as far as possible by using them to create infrastructure such as drainage and field channels, roads and social infrastructure required for growth of small scale industries.

Basic priorities

Thus it is seen that the basic priorities for the Seventh Plan are food, work and productivity with which nobody can quarrel. For this, it is proposed to have a strategy built around higher agricultural growth and creation of employment, improvement in efficiency and in quality of production and technological upgradation in industry and infrastructure, the use of less capital-intensive and more labour-intensive techniques and shift in investment priorities towards items of mass consumption and measures to improve the quality of life.

Deficit and inflation

Though we fully endorse the objectives, we have some reservations regarding strategy and operational mechanism. The Resource Paper aims at a public sector plan outlay of Rs. 1,80,000 crores at 1984-85 prices. Now it is estimated that resources gap in Seventh Plan would be about Rs. 32000 crores even with a deficit financing of Rs. 10,000 crores and additional resource mobilisation of Rs. 36,000 crores. The resource gap which was about 5 per cent for the Sixth Plan is now placed at 18-19 per cent in the Seventh Plan excluding deficit financing It is therefore difficult to envisage how a plan outlay of such a huge magnitude can be made possible. The rate of growth of a little more of 5 per cent is not high. Even though the long-term growth of national income has been of the order of 3.5 per cent, in the Fifth Plan we have come to a level of almost 5 per cent in the Sixth Plan. But the question is how to fill up the gap in resources without creating inflationary pressures in the country. The order of deficit financing and additional resource mobilisation

proposed in the Approach Paper are as such inflationary. Inflation has been a terrible tragedy of Indian planning. We cannot take comfort in the sense that in some other countries, the rate of inflation is higher. In fact inflation has negatived most or the benefits of development and welfare programmes in the country. There is no policy framework in the Approach Paper to contain inflation. If we cannot contain inflation, a higher plan outlay will have no meaning, nor a growth rate of 5 per cent per year. So, a suitable policy framework should be devised to improve operational efficiency, prevent leakage, decentralise the process of decision making and so on, to contain inflation or to reduce the plan outlay of the public sector. Inflation and equity cannot go together.

There has been a lot of controversy with regard to savings rate. The Approach Paper estimates a savings rate of 26 per cent in the year 1984-85. In the light of savings performance of around 22.4 per cent in 1983-84 based on Reserve Bank's quick estimates, reaching a 26 per cent savings rate in 1984-85 may not appear easy. Similarly the Approach Paper estimates a population growth of about 1.8 per cent and the terminal year population at 803 million. The projections made by Sundaram and Tendulkar show that the estimates of the Approach Paper are less by 36 million in the terminal year. If the assumptions of the Approach Paper become unrealistic, all the calculations made in the Approach Paper regarding the rate of growth of income, improvement in per capita income, etc. would go away. This would be another case of failure in reaching the desired targets.

Reorganise rural economy !

I would like to make a final point regarding equity, social justice, eradication of poverty as all these are bound to assume a high priority in our development plan. No amount of welfare or relief programmes will reduce the extent of poverty unless we bring about a structural change in the economy. In the development plan, vested interests are growing. The 'trickle down' formula has been reversed in welfare programmes. What we mean is that only some benefits of development and welfare programmes trickle down to the poor, the rest is being appropriated by a number of vested interests As a first step, we suggest a reorganisation of the rural economy so as to alter the power balance in the villages. Prof. A. K. Sen has pointed out that poverty is a function of entitlements. To be able to live above the poverty line, one must possess assets|skills which can produce enough food or income to buy the food above the subsistence level. In 1971-72, about 60 per cent of the rural households owned less than 10 per cent of agricultural land while 2 per cent at the top owned almost one-fourth of the land. The distribution has not altered since then. Out of 347 million acres of cultivated area, only 2 million acres (about half a per cent) has been distributed by June 1983. This does not augur well with the equity programme of the Seventh Plan. In addition to the structural change in rural areas, a lot of things has also to be done to improve administrative efficiency and prevent concentration of economic power in the urban areas. Space does not permit us to analyse all these problems. But without such changes and requisite policy instruments and their viability and adequacy in the light of past experiences, the major thrust of the 'Approach Paper' will be dream rather than a reality.

(*Continued from page 5*)

from the State Government, General Insurance Corporation of India will determine the amount of claims payable in respect of each bank for each defined area. On receipt of claim amount from the General Insurance Corporation of India, the bank concerned would credit the loanee farmers' accounts with the indemnity amounts. Since 1|3rd of the losses are to be shared by the State Government, 1|3rd of the claims would be remitted by the State Government on the advice of the General Insurance Corporation of India. These claims would be paid out of funds available with the State Crop Insurance Fund. For operational flexibility and for quicker settlement of claims, the State Crop Insurance Fund would operate through a bank account, as in the case of IRDP.

Need for coordination !

For smooth running of the scheme, close coordination among the various departments of the State Governments, General Insurance Corporation of India and the Central Government would be absolutely necessary. However the administration of the scheme may still not be an easy job Our basic aim is to use crop insurance as a total of agricultural development for improving agricultural production and productivity. Crop Insurance would play its assigned role only when it is included as a part of a package programme for the development of agriculture. In the initial stages the State Governments would have to play a crucial role in adopting the scheme, publishing it in various regional languages through the media and the extension network. The present area of crop insurance is a taluqa which in a few States cover 2 to 3 blocks. It will be our endeavour to reduce the unit area of crop insurance to block level for which additional crop cutting experiments would have to be conducted in respect of each crop State Governments will have to strengthen the present machinery in this regard and for this purpose it has been decided to give financial assistance to State Governments on a matching basis.

(Courtesy: All India Radio)

Power generation, the pumped-storage way!

P. Bhattacharyya

All over the world specialists are trying to tackle the crisis of the non-replenishable sources of energy by developing a wide-rangin non-cenventional sources of energy as the solar, wind, tidal, sea wave, geothermal, temperature difference of the sea water and fusion. At the same time, they are concentrating on the conservation of energy sources also. In this article, the author deal with pumped-storage plant as one of these means of conservation.

JUST IMAGINE THERE IS, on the Delhi banks of the river Yamuna, big storage lake of water carved 100 metres higher than the river bed, amidst the ridge What does it do ? At night time when the demand for power in the city dips to the lowest, water from a bottom poll on the Yamuna is pumped up to the upper storage lake with the help of reversible turbines, which act as pumps then. The surplus power of night time is thus put into use.

During the peak hours in the day time the accumulated water is released. It rotates the turbines to generate additional energy and thus meets the load on the system.

This is, of course, all imaginary yet as there is no such facility in Delhi. But for the residents of the big industrialised city of Kiev, the capital of Ukrainian SSR, it has been a reality since 1971 The Soviet experts, finding the pumped-storage plant in the Ukranian capital very efficient are now constructing a number of big pumped-storage facilities in other areas of the Soviet Union also.

What is a pumped-storage plant !

It is known to everyone that the load on the energy system varieties with the time of the day. At night it usually drops to two-thirds of the peak demand. On some nights it may even stay below the 50 per cent level. But the generation of power goes on at the same rate and there is no means to store this surplus power. Pumped storages have been developd to retrieve and use this surplus power during the peak demand period.

The pumped-storage has two communicating pools. One of them is dug in a natural terrace situated atleast 100 meters higher than the lower pool. This height differential is crucial for choosing the site for the project. The surplus energy in the night time is consumed in pumping water to the upper pool from the bottom one. The stored water is used during the day time to rotate the turbines and generate electricity. In this way the pumped storage plants optimise the operating conditions on nuclear and thermal power giants.

Zagorsk plant

There are no rivers in the Moscow Region big enough for building a 1.2 million KW hydro-power station. But even the small river Kunia, winding among the hills 54 kms away from Moscow and in in the vicinity of the town of Zogrsk, has a big enough potential to accommodate a pumped-storage of the same capacity. The Zagorsk pumped-storage plant is now being constructed here.

The bottom pool (a water reservoir) on the river Kunia will store 32 million cubic meters of water, of which 22 million cubic metres will be pumped at night to the upper pool. The project will house six 200,000 KW two-way turbines, which will operate alternately as pumps and turbines, with individual

pipelines leading to it. Usually, these pipelines are assembled of steel pipes. It has been established, though that the use of the high-head steel water conduits bears an enhanced accident probability factor. In such pipelines, for example, cracks increase avalanche-like. The Zagorsk pumped storage will thus have water conduits made of steel reinforced concrete pipes.

It has been estimated that the Zagorsk project will save over 700,000 tons of conventional fuel a year, which would other-wise be burnt by conventional power stations to generate electricity at times of peak demand.

A flow-line process

The operation of the USSR's first 225,000 KW pumped-storage in Kiev, the Ukraine, started up in 1971, confirms the efficiency of such stations. Another major pumped storage project with a capacity of 1.6 million KW is now being built in Kaisiadorys in Lithuania, a Baltic Republic. The Zagorsk and Kaisiadorys pumped-storages will be the head projects of a network of standard generating facilities of this type with average water head of about 100 metres. Their standardisation will make the construction of the pumped-storages a flow-line process and will bring down their construction cost.

Plans have been made to build a network of pumped-storages with an aggregate capacity of 35 million KW. These projects will go up in the Leningrad region, on the river Dniester, in the middle reaches of the Volga and some other regions which have been chosen after a thorough geodetic survey of the likely sites. The majority of the stations will have a unit capacity of 1.0-1.6 million KW. It has been also planned to build much bigger stations, like the 3.6 million KW Kanev station.

The efficiency of pumped storages depends on the water head. With an increase in the water head a power station of a certain installed capacity needs less water to reach its maximum. In the Central and north-western regions of Central Russia, where a height differential of over 100 metres is not frequently met, one can hardly expect any considerable increase in pumped-storage efficiency. In the mountain regions height differentials range from 200 to 400 meters This figure can be increased to 1,000 metres and more by sinking a bottom pool and the station's building beneath the land surface. Favourable engineering and geological conditions for the construction of such stations in the future are available in some regions of the European USSR. Design engineers have already developed a project of a 1.2 million KW pumped-storage with six 200,000 KW penetrating units and an underground bottom pool at a depth of 1,200 metres.

High-efficiency factories

Pumped-storages are high-efficiency factories of electricity. They are noted for a high level of automation, simple maintenance, small operating crews and operational costs lower than at the conventional thermal power plants. But the projects have their drawbacks also. For instance, of such 100 kwh of electricity drawn by pumped storages from a power grid it returns only 75 kwh. This disadvantage is, however, made up for by the fact that it consumes surplus electricity generated by conventional power plants at night time.

The removal of land from circulation for the purpose of digging water pools is another shortcoming However, there is always a possibility of using available water bodies as the bottom pools. For instance, the water reservoir of the Kaunas hydro-power station on the river Neman will be used as the bottom pool of the Kaisiadorys pumped storage. Plans have been made to build several pumped storages based on the water reservoirs of the Dnieper and Volga hydro power networks.

Possibilities in India

In India possibilities of pumped-storage facilities have hardly been explored yet. There is, however, no doubt that the large number of Indian rivers flowing through the abounding hilly terrains provide excellent scope for constructing a chain of pumped-storage plants. These may, subsequently, form a very useful part of the national power grid one day. In this field also, as in many other areas, India may avail of the useful expertise of the friendly Soviet Union to immense benefit for the people of India. It is time that the Indian policy makers take note of this

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Patrolling on national highways

The Centre has launched a National Highway Petrolling Scheme as a pilot project on five selected sectors of National Highways viz. Delhi-Chandigarh (NH-1), Ahmedabad-Surat (NH-8), Bombay-Kolhapur (NH-4), Madras-Dindigul (NH-45) and Calcutta-Durgapur (NH-2). These sectors have been identified keeping in view the heavy traffic density and accident-proneness.

The scheme envisages setting up of Traffic-Aid-Posts at an approximate distance of 50-60 kms Each Traffic-Aid-Post has been entrusted with the responsibility to patrol the assigned area and as when any mishap occurs, to flash the news, to render first-aid medical assistance to the victims, to take the injured to the nearest medical centre, to remove the vehicle from the road and ensure uninterrupted flow of traffic.

The financial assistance is provided by the Central Government to cover the expenses of equipment, and also for initial year's expenses on Traffic-Aid-Post personnel. For implementing Highway Patrolling Scheme on Calcutta-Durgapur sector with four Traffic-Aid-Posts, the State Government of West Bengal was provided with a total of Rs. 25.72 lakh during 1983-84 and 1984-85. □

Decentralizing energy sources!

Dr. Mani K. Madala

The conventional energy system, which has been developed in response to the urban-oriented industrialization programme, has not proved adequate to the increasing needs of the rural population in developing countries. Even the few benefits that trickled down have not been distributed equitably. The author feels that there is a need for a new approach to meet energy requirements and she suggests the approach.

ECONOMIC DEVELOPMENT based on oil is becoming an increasingly risky proposition, both in the developed and developing countries, as it brings with it dependence on oil imports and the consequential problem of balance of payment. Use of coal, though available in plently is becoming increasingly unfashionable as it pollutes the air when burnt and ruins the land when mired.

Nuclear power still remains a dream for many countries because of rising costs of commercial reactors. Doubts are cast about nuclear waste disposal and uranium availability and, above all, there is a growing public opposition to locating such a plant.

Our dependence on the non-renewable energy sources and on energy imports has made us susceptible to price fluctuations and supply interruptions. Major and minor power failures, whether due to causes controllable or uncontrollable, have made the people increasingly vulnerable. Factories have to be closed down and people thrown out of work As dependence upon non-indigenous power sources increases, people tend to have fewer energy options. The major electricity grids and regional energy dependency have become costly both socially and economically. Large investments are needed in setting up large electricity generating facilities, or oil movement or unclear reactors, etc. These have tended to work to the advantage of the developed countries, both politically and economically. What we need is a cheap and renewable source of energy. The most abundant, safe and efficient sources of energy are : waste energy and solar power.

A unit of energy saved is more valuable than one produced. Governments can direct their people in this regards. Taxes on fuel and levies on automobile size can turn the people towards the desired consumption patterns. Most of the developed and developing countries have a poorly-designed transportation system—cars that are too heavy, engines that give poor mileage, goods that can go by rail are carried by trucks; energy wasted on air-conditioning, offices and residential premises that are designed rather on the whims of architects than by climatic conditions. Fuel can be used more efficiently and economically in cooking by adopting pressure-cooking. Government policy, industrial practices, personal habits should be geared to using energy economically.

Use of solar energy !

Solar energy is well suited for community as well as individual. It is available abundantly! A few cans filled with water on a roof can be heated by it. The Solar Energy Industries Association estimated that there were 183 solar heated homes in U.S. in 1975. The figure rose to 5000 by the end of 1977! The mini hydro-electric power plants are yet to catch on in this country. Such plants are more efficient and environmentally less disruptive than large hydro power projects. About 37 per cent of China's electricity is hydel and estimates suggests that as much as one-

fifth of it comes from small plants. It is reported that by 1975, China had built 60,000 small hydro-electric power plants. The production of use of hydro power is not only efficient and economical but also socially consistent. India is a large country endowed with vast potential for such mini hydro power plants. In planning and setting up such mini hydel power plants, the political and economic dominance of a region by virtue of having a large hydro power project could also be avoided.

Harnessing the wind !

The wind mill has stood the test of time and is useful in generating small quantum of power. They are more efficient, operate in low winds are technically simple and relatively inexpensive, amenable to local control and can serve small needs like grinding flour or running irrigation pumps. Already some communities like Galebs in rural Ethopia have widely adopted it and have found it useful. In New York city, some people are using wind mill on the roof of their tenements, solar power that is captured and stored in green plants is a renewable source of energy that is also well suited to local needs To better manage dwindling firewood supplies, some communities in the third world are organising and protecting local woods and starting plantations. Fast-growing trees are being developed to be planted along roadsides and private lands. This enables a sustainable supply of fire wood, the most traditional energy source. When organic matter decays, in the absence of oxygen, it generates methane gas. Controlled fermentation of both plant and animal waste in biogas plants can produce methane suitable as a replacement for natural gas.

Biogas, a solution !

The first attempt to introduce widespread use of biogas was in India in the forties. The gobar gas technique has been rather slow to get off the ground. By 1975, less than 25000 small plants were in operation. By contrast, biogas plants are widely used in the villages of China. In May 1977, the New China News Agency reported 43 million working units, many of them community plants each producing enough gas to meet the needs of upto 30 people. Recent reports indicate that in Szechwan Province of Chine alone, 17 million peasants use biogas for cooking, heating and lighting.

What others are doing !

The Chinese biogas system demonstrates the advantages of bio-gas plants to low income rural people. Several families working together can provide themselves with gas and fertilizer from their own wastes Where communities have a tradition of working together to solve problems, biogas plants can be an agent of fast local development. The lack of such a tradition in India may account for slower adoption of biogas system. In many cases, the biogas plants in India benefit only the well off people. Without equal access to the plant and animal wastes, which are fed into the biogas plants, the poor cannot take advantage of the system.

Energy Crops !

Many green plants can also be grown as energy crops. In late 1975, Brazil launched an ambitious programme to reduce country's dependence on imported petroleum through the distillation of cassara and sugarcane into gasohol for use in automobile. By mid-1977, service stations in Sao Paulo and Rio-de-Janeiro were selling a mixture of gasolene and alcohol. Larger production of cassara and sugarcane will be required to meet the national goal of replacing 20 per cent of gasolene with alcohol. The Government is still in the process of deciding whether to favour intensive sowing of these crops on plantations or on small land holdings. Support for small farm production would ensure equitable distribution of the benefits of increased national energy. Power transmission takes time while most of the solar technologies are basically simple. The consumer only indirectly experiences the benefits of dependence on non-renewable energy resources in view of the frequent price rise and periodic shortages of electricity. The initial capital cost and the maintenance of solar power technologies generally dissuade consumers from making use of them. But there is a growing public dissatisfaction with the traditional, highly centralized power generation. Mass protests have virtually halted construction of nuclear power plants in many countries In several cases, the citizen groups have started questioning the very energy policy of the Governments and how energy should be produced and distributed.

Government can provide adequate funds for research and development of solar technologies to give consumers numerous options in the use of solar energy As communities become more self-reliant in energy, their economics will become less susceptible to disruptions caused by fuel shortages and their rising prices Most future energy needs can be best met by utilizing waste energy and by harnessing solar power. The tapping of these energy sources requires the continued participation of consumers. This will go a long way in remoulding the society. Responses to the global energy problem will profoundly effect the social and political spheres for years to come. □

Foodgrains in FCI godowns

The total stock of foodgrains with the Food Corporation of India (FCI) as on March 31, 1985 was 17.11 million tonnes.

The stocks of foodgrains were normally built up through procurement operations in the country. □

Solar photovoltaics for electrifying villages!

J. R. Meena

The author points out that even in the near future, electricity cannot be carried to about 10,000 villages, which lie in the remotest corners or located in difficult terrains, because of high investment involved in transmission, etc. He pleads for introducing solar photovoltaic systems, a non-conventional energy source, for supply of power to such villages. The author explains in detail here how such a system can work..

INDIA IS A vast country with an area of 3.27 million square kilometres and population about 680 million people. Over 75 per cent of the population lives in rural areas comprising 5.76 million villages and drawing sustenance mostly from agriculture. Over 3.5 million villages have so far been electrified in the country. Rural electrification has been assigned an important place in the country which seeks, inter alia, augmentation of irrigation potential and electrification of villages. Keeping this in view, Rural Electrification Corporation which is responsible for electrification scheme, has drawn a plan of action aimed at accelerating the pace of rural electrification and to fulfil the achievement of 100 per cent electrification by 1990. The emphasis of the rural electrification programme has been on stimulating the use of electrical energy in rural areas for lighting and other productive purposes such as energisation of pumpsets for irrigation and drinking water supply and provision of electricity for small scale industries based on locally produced raw materials. The use of electricity for lighting houses and street and community|adult education centres, libraries, etc. also helps in improving quality of life in rural areas.

Electrical power needs in villages

The electricity needed in villages is for :

— pumping water for irrigation and drinking water supply.

— Lighting.

— driving farm or small industrial machinery such as mills, saws, etc.

— Primary health centres or sub-centres or dispensaries.

— Community facilities such as library, adult education centre, school, etc.

— Veterinary hospitals|artificial insemination centres.

— refrigeration of vaccines, medicines and semens in veterinary hospitals or insemination centres.

It is considered that there are about 10,000 villages which cannot be provided with conventional electricity in the immediate future on account of too remoteness, terrain, high investments, etc. In view of this, new and renewable sources of energy are more suited for electrification of such villages which are remote and are located in desert and hilly regions in the country. The new and renewable energy sources are locally available and have no adverse environmental impact. With no recurring or fuel costs, electricity can be produced at the site of use itself thus obviating the necessity of long transmission and distribution lines; hence no power losses. By providing electricity with the renewable energy sources, dependence of villagers on conventional power

supplies can be reduced or eliminated, and their economy can be improved by way of enhancing agricultural production, and creating additional employment in rural areas.

The electricity produced by the non conventional energy sources can be used for basic needs such as for drinking water, lighting, irrigation and agricultural operation, for the existing economic activities such as agro-industries, food processing industries, traditional crafts and cottage industries, and for new income generating activities, community services and cultural services.

Conventional electrification, its problems

According to the Rural Electrification Corporation, the villages that remain to be electrified suffer from the following constraints :

— most of the villages are sparsely located in remote places because of which the cost of electrification per village is higher;

— The electrification of such villages involves forest clearance;

— Another group of villages that has been largely left untouched is the ones having scattered habitation in tribal and other backward areas located in hilly terrains. A revenue village consists of hamlets scattered over a large area As such, the electrification of all the hamlets involves very heavy expenditure.

— Another problem being faced in electrifying the remaining villages is that in view of their remoteness, difficult terrains and other topographical problems as well as scattered habitation and relatively socio-economic backwardness, power load is not going to materialise as quickly as it is in the case of villages electrified hitherto The revenue that is likely to accrue as a result of the electrification of these villages by conventional grids will, therefore, be relatively much less.

Even in areas where electrification of the villages has resulted in substantial load materialisation, the concept of street lighting has not been widely accepted. Some of the households do not like to take service connections also. As regards irrigation, the power supply is so irregular that sometimes the crops get dried as the [illegible] of irrigation water. In areas where diesel pumpsets are used, farmers have to transport diesel over long distances and they have to incur heavy expenditure in the purchase and transport of diesel oil.

Keeping all these considerations in mind, it is considered necessary to think of electrifying those villages by non-conventional energy sources which are remotely located, which have small and scattered habitation, the electrification of which involves clearances of forests or surmounting other problems of terrain, etc. It is estimated that such decentralised sources of energy as mini or micro hydel plants, solar photovoltaic systems, bioenergy, wind energy, etc. can be used to provide electricity for rural areas expeditiously. In this article, mention has been made *only* of the supply of electricity by solar photovoltaic for lighting.

What is solar photovoltaic systems !

The primary component of any solar photovoltaic device is the solar cell which facilitates the conversion of solar energy directly into electricity The solar cell only converts part of the solar energy falling on it into electrical energy. This conversion efficiency for silicon solar cells at present generally ranges from about 8 to 15 per cent. These cells perform most efficiently at extremely low temperatures. Solar cells are connected in series and parallel combinations to give the desired voltage and current ratings and encapsulated in modules. The encapsulated and covered modules are then mounted on or within a backing material, namely fiberglass, tempered glass, metal, etc. This basic solar module configuration will provide good protection against environmental conditions. Some extreme environmental conditions such as hailstorms, dust, or salti air may require the use of other special materials. The modules are then interconnected to form panels and arrays to deliver the required power for any application or appliance. A mechanically and electrically integrated photovoltaic panel or array will consist of a support structure, and other components as required to form a free standing, field installed unit that produces electrical energy. The specified application for which the photovoltaic panels are used will determine the number and the type of panels required.

The photovoltaic technology seems to have tremendous potential in the country where there is great need for electrical power for decentralised applications. Among the well-known advantages of a photovoltaic power systems are the absence of moving parts facilitating easy installation and maintenance, no noise or environmental pollution, no recurring or fuel costs, reliability and long life. Thus the photovoltaic systems are most suitable for installation in remote and isolated areas, forest and hilly areas, desert locations, etc. Among the applications which have been demonstrated in India are water pumping for irrigation and drinking water supply, community and street lighting, community TV and radio receivers, power supplies for microwave repeater stations, off-shore oil platforms, medical refrigerators, railway signalling, and battery charging.

Two public sector companies, namely, the Central Electronics Limited and the Bharat Heavy Electricals Limited are engaged in the PV programmes. Though the initial costs of the solar photovoltaic systems are high in relation to systems based on conventional energy sources, they are economically competitive even at today's price in areas which are not served by electricity grid, are remote, and where power requirement is relatively low.

Its application !

Salojipally, an unelectrified village in Medak district of Andhra Pradesh, was the first village in India to be electrified by solar photovoltaics. This village has a centralised photovoltaic power station of about 7.3 KW peak capacity to provide power for street lights, TV sets, and water pumps. Following the successful demonstration of photovoltaic powered street lighting units in this and a few other villages, the Department of Non-Conventional Energy Sources took up a wider field application programme for the electrification of 220 unelectrified villages in different parts of the country, in cooperation with the Rural Electrification Corporation, State Electricity Boards and some State Nodal Agencies for the Renewable Energy Programmes.

Photovoltaic power plants !

In a pole-mounted street lighting, the photovoltaic panel is installed on top of the pole from which energy is stored in a battery placed at the base of the pole and is used to provide power to energise fluorescent tubelight of 20 watts. The single module units each can provide lighting for 3 hours, double module units for 6 hours and three module units for 9 hours daily. A sensor and timer device can be added to ensure fully automatic operation. Indications are that the provision of electrical power for certain essential needs and community services could be done more economically and conveniently by small photovoltaic power stations rather than extending conventional grids to small and remote rural areas at very high costs. It is estimated that the photovoltaic power plant of 1-2KW capacity can meet electrical power requirements of a village having population of about 500 people. That is to say, that installation of as low as 2 watts of photovoltaic capacity per capita can make a significant contribution in improving the economy and living conditions of the people in rural areas.

A number of calculations reveal that under typical conditions, a photovoltaic power system catering to small loads of the order of a few kilowatts can be economically competitive to conventional systems at distances beyond 10 kilometres from the existing conventional electricity grids. This of course takes into account the time and operational difficulties involved in extending transmission lines by the conventional methods.

Electric power is a very convenient and versatile form of energy which can make a major contribution towards the objective of rural development. The small power requirements can easily be met from new and renewable sources of energy, especially from solar photovoltaics. It may be mentioned that apart from electricity, cooking and other energy needs can also be most usefully supplied from renewable energies in increasing measure. Through various programmes pertaining to renewable energies, it should be possible to integrate the increased quantum of local energy available with overall rural development, thereby increasing the economic activity and additional employment, raising incomes and improving the well-being and living conditions of the people.

New plants to process fruit and vegetable products

OVER 6250 TONNES of tomatoes, 1520 tonnes of mangoes, and 530 tonnes of poineappes will be processed annually by the Agro-Industrial Project at Hajipur in Vaishali District of Bihar. The project being implemented by the Bihar Fruit and Vegetable Development Corporation Ltd.. jointly set up by the Union and State Government aims at integrating production, processing and marketing of fruits and vegetables.

The Union Government has already contributed its equity share of Rs. 49 lakh to the project which involves a capital outlay of Rs. 194 lakhs. The project is expected to be completed and commissioned during the current year.

The public sector Modern Food Industries (India) Ltd., (MFIL) is setting up a pineapple juice concentrate plant at Silcher (Assam) with a capital cost of Rs. 207 lakh. The plant would process 4060 tonnes of pineapples annually. The MFIL is also setting up a fruit processing plant at Bhagalpur (Bihar) with a capital cost of Rs. 119 lakh. The plant would process 3,360 tonnes of mangoes, 1,680 tonnes of guavas and 1,440 tonnes of pineapples per annum. The Bhagalpur Plant is expected to be ready by the middle of the current year and the Silchar Plant by early next year.

Besides, the North Eastern Regional Agricultural Marketing Corporation (NERAMAC) is also setting up a pineapple and orange juice concentrate plant at Kamarghat (Tripura) at an estimated capital cost of Rs. 213.56. lakh. The plant would have a capacity of processing about 6,800 tonnes of pineapples and orange annually.

Boosting agricultural exports !

M. Dattatreyulu

Agricultural exports are a sure course to improve the foreign exchange earnings. India has all the capability to emerge as an important exporter of agricultural products to world markets. A dynamic strategy, however, needs to be formulated to convert various export opportunities into realities during the Seventh Plan and beyond.

THE WORLD TRADING ENVIRONMENT is fast changing and is becoming more and more complex. Developing countries are under severe strain confronted with innumerable problems—the balance of payments problems, the burden of external debt and its servicing, high interest rates, unstable exchange rates and depressed export earnings. Protectionism in all its forms as practised by the developed countries is thwarting the exports of the developing countries. In the agricultural sector, many protectionist measures have combined to restrain the growth of trade, including access limitations, open-ended support policies in high-cost producing countries and particularly in recent years the widespread use of export subsidies to dispose of the resulting surpluses. The prolonged economic recession has caused stress and distress on hundreds of millions of people in agriculture in different parts of the world, particularly in the developing countries.

Recent developments in overall trade relations are also causing concern. Bilateralism has been displacing the multilateral approach, sowing the seeds of trade skirmishes which are outside the GATT framework.

South-South cooperation as well as North-South cooperation are very necessary to help promote each others interests. It is, however, found that pronou cements made at various international fora are n materialising into concrete programmes of action th would help improve the economic situation of the de veloping countries. While no one can question th importance of global interdependence, it is essenti especially for a country like India to work steadfastl for lesser dependence on others and to emerge as self-reliant economy and also an important export to global markets.

At all the international fora India must plead fo a multilateral liberalisation of markets and with special emphasis on enhancing the purchasing powe of developing countries.

Unexploited agricultural export potential

Foreign exchange is a crucial input to the economi development. India must devise ways and means t tap every sector to earn the much needed foreign ex change. Unless and until each sector of the India economy plays its role fully, it is well-nigh impossibl to bridge the mounting trade gap. It is in this contex agricultural exports assume a key role.

If it is said that India has not tapped the full poten tial of agricultural exports, it is not an understatemen The Export Policy Resolution of 1970 very clearly ou lined the scope of agricultural exports and had eve suggested the line of action to follow to exploit th promising export potential. The Five Year Plans als emphasised the urgent need for a greater emphasis o developing agricultural exports. Unfortunately, wit all the best intentions, India's agricultural exports re mained rather very modest. Problems associated wit various agricultural commodities in respect of produc tion and exports persisted causing a set back to greate exports. During the last three or four years agricul tural exports from the country ranged betwee Rs. 2100 crores and Rs. 2500 crores constitutin around 30 per cent of India's total exports.

The overlooked benefits

The various benefits conferred by agricultural exports are overlooked. Apart from the vast potential to earn foreign exchange, agricultural exports contribute significantly to the rural development particularly in providing employment opportunities and incomes to the rural poor and landless labourers. The capital output ratio in agriculture is lower than in the industry. Production of high value exportable crops would improve the economic conditions of small and marginal farmers. Similarly export markets for the minor forest products improve the living conditions of the tribal population and landless labourers.

The lopsided development

The record foodgrains production of 151.5 million tonnes in 1983-84 from 50.8 million tonnes in 1951 is a measure of the strength and resilence of agriculture in the country. But unfortunately development in agriculture remained confined to a few sectors. Agricultural exports did not register any perceptible growth. The potential of agricultural exports remained largely untapped due to excessive reliance on low farm technology, lack of intensive research efforts on crops other than cereals, stagnant output, low per hectare yields, rising domestic demand, stop-go policies, lack of fuller co-operation and involvement by the State governments in increasing farm output and generating exports surpluses, inadequate deployment of marketing techniques, inability to stand upto organised houses that dominated world commodity trade and lack of cohesive and pragmatic export strategy.

Tasks

Increasing agricultural production particularly for exports constitutes the main task in augmenting agricultural exports. In this endeavour problems that come in the way of expanding production and exports need to be tackled urgently. Problem areas in respect of selected commodities which have enormous exports potential are high-lighted.

Fish preparations

This is an item with tremendous export potential It is necessary for India to acquire a large fleet of deep sea fishing trawlers to exploit the deep-sea resources. Presently exports are dominated by frozen shrimp mainly in bulk but by proper packaging, value addition can be made and shrimps can yield a mark-up of at least 30 per cent. Intensive efforts, however, are necessary to catch other varieties such as prawns, lobsters, oysters and squids to achieve diversification in exports. Possibilities of co-operation with some of the leading countries in fishing technique need to be explored to exploit the export potential. There is also the urgent need for storage and transport faciliiies duly backed by quality control.

Meat & meat products

There is enormous potential for the export of meat and meat products. India, so far has not been able to take advantage of the growing export opportunities for these products in full measure due to lack of necessary export thrust and infrastructural facilities. There is lack of strategic slaughter houses (abattoirs) organised on modern lines, absence of disease-free zones for rearing the animals for slaughter, inadequate attention for eradicating the diseases that normally afflict the animals (rinderpest and foot-and-mouth diseases). The Ministry of Commerce has a proposal to establish a National Meat Board. The setting up of this Board is considered necessary to ensure comprehensive, co-ordinated and scientific development of live-stock, meat processing for export and meat by-products development

Spices

Spices have been contributing substantially to India's export development. Bulk packaging of spices needs to be replaced by unit packing to earn increased foreign exchange. The Ministry of Commerce is setting up a Spices Board. The Board is likely to take up schemes for augmenting production and also to adopt some marketing strategies to improve the export performance of spices. The Board also should pursue exports of packed spices with the help of proper policy support by way of cash assistance and import facilities for machinery and materials. India should also develop production and exports of spice oils and oleoresins in substantial measure as these items offer considerable value addition. The image of India as a traditional supplier of spices in bulk needs to be changed in overseas markets in favour of retail packaging.

Cashew kernels

In view of the dwindling supplies or raw cashew nuts, particularly from the East African countries, India has no choice but to augment production of raw cashew nuts within the country to meet the processing requirements fully. The problem of inadequate production of raw cashewnuts within the country and dwindling supplies from outside has been in existence for many years but precious little has been done to rectify the situation. The World Bank aided Multi-State project on cashew which is operating in the four states of Kerala, Karnataka, Andhra Pradesh and Orissa may help to alleviate the problem of inadequate supplies of raw cashew to some extent. There is, however, the need to tap the potential available in raising cashew plantations in other States such as Tamil Nadu, Maharashtra, Goa, West Bengal and Tripura. Investments have to be made to raise new plantations and NABARD should come forward to assist such schemes. India should also go in for retail packaging of cashew kernels through sophisticated machinery in order to realise higher value addition. A value addi-

tion of 300 percent is considered feasible through better packaging for retail sale.

Sugar

India has the capability to remain as a stable exporter of 10 lakh tonnes of sugar annually after meeting the domestic requirements in full. In order to maintain sugar exports as per the quota allocated by International Sugar Agreement, it is necessary to provide subsidy. Export outlet for sugar is very vital. It is equally necessary to ensure that the area under sugar-cane cultivation is not increased at present. Instead efforts should be directed towards improving the sugar content as well as productivity of sugar-cane in the country. Sugar factories that have excess cultivable land should undertake cultivation of basmati and super-fine varieties of rice to cater to export markets.

Coffee

Coffee production needs to be expanded by bringing in new areas under cultivation and improving the yields in the existing areas. Increased output is very vital to meet the expanding demand, both in the internal markets and exports. North Eastern Region has adequate potential to grow coffee. Adequate extension services, supply of seeds and other inputs, proper training facilities to coffee growers, financial incentives and marketing arrangements are required to encourage new plantations and new growers. As a member of the International Coffee Agreement, it is necessary for India to remain as an important and consistent coffee exporting country. Efforts should be made to obtain increased quotas with increases in domestic production and export capabilities. India should also make efforts to capture the markets for instant coffee which are currently dominated by a few international renowned companies like 'Brooke Bond', 'Nestle', 'Maxwell' etc. As suggested in the case of other crops, the National Bank for Agricultural and Rural Development should earmark funds and encourage concerned State governments to come up with schemes for raising coffee plantations, particularly in new areas.

Cotton

India has not only stopped imports of raw cotton (except in situations of crop failure) but has even emerged as an exporter of raw cotton (both long staple and short staple). Efforts are necessary to improve the yield rates and to eliminate the diseases that afflict the cotton crop. These problems need to be tackled urgently if India is to emerge as a dependable supplier of cotton to world markets.

Oil cakes

The recently set up National Oil Seeds and Vegetable Oils Development Board will have to address itself seriously to the task of augmenting production of oilseeds and make the country self-sufficient in the shortest possible time. It is necessary to achieve stability in the production of oilseeds and this helps in arresting imports of edible oils and at the same time help in maintaining and expanding exports of oil cakes.

Tea

India is one of the leading producers and exporters of tea in the world. Tea ranks first among the agricultural exports. The future prospects of tea industry depends upon the increase in the area under cultivation, replanting and replacing of old bushes. Large investments have to be made into the tea industry to retain and improve India's image as a supplier of tea to world markets. The industry should keep pace with the market developments and undertake product diversification. Tea bags and instant tea have high value addition. India should make promotional efforts along with other co-developing tea producing countries like Sri Lanka and the East African countries.

Tobacco

Unmanufactured tobacco is an important traditional item of India's agricultural exports. It is necessary to regulate production of Flue Cured Virginia (FCV) tobacco in black soils. At the same time, production of FCV tobacco in light soils needs to be encouraged by the Tobacco Board through appropriate incentives Production of high grades of tobacco and market diversification are equally important to project the interests of growers, particularly on the price front

Rice

India's basmati rice fetches good prices in export markets but there is stiff competition from Pakistan Urgent efforts are needed to use high-yielding varieties of seeds to boost production and to generate export surpluses. It is essential to enlist the cooperation of the State Governments in order to increase production and export of rice.

Apart from the items briefly discussed, there are a large number of items for which India has ample production potential and export capability. These include HPS groundnuts both in bulk and in consumer packs. fresh fruits and vegetables, cut flowers, ornamental plants, seeds, cocoa, eggs, poultry meat, processed foods, castor oil, shellac and minor forest products.

Augmenting production

The first and foremost requisite in exploiting the agricultural export potential is to increase agricultural production significantly, not only to meet the domestic requirements in full but also to generate adequate export surpluses. Large number of agricultural crops in the country suffer from low yields. It is, therefore, necessary to step up agricultural productivity through irrigation facilities, increased application of various inputs and farm extension services.

There is need to augment agricultural credit facilities mainly to encourage the farmers to take to im-

proved methods of cultivation so as to increase agricultural productivity and production. The National Bank for Agriculture and Rural Development (NABARD) has to devote increasing attention to the aspect of providing agricultural credit, particularly to the cultivators of export-oriented crops through concerned State Government agencies. It is also necessary to institute suitable subsidies to promote agricultural exports. Subsidies would not only facilitate increased exports but also help in strengthening the agricultural production-base in the country.

Government may also have to formulate a policy for developing large tracts of agricultural land (almost on the basis of Free Trade Zones), without any statutory restrictions for promoting production of export-oriented crops. The State Farms Corporations are no doubt in operation in certain States but there is a need to develop the concept and culture of hundred percent export-oriented production by cooperatives and private enterprises mainly to expand exports.

Special emphasis needs to be given for augmenting production of such items that are currently being imported for domestic consumption and for export after processing. The establishment of a National Oilseeds and Vegetable Oils Development Board for the development of oilseeds and vegetable oils in an integrated manner is a step in the right direction and it has not come a day too soon. Similarly vigorous efforts are necessary to improve productivity and increase production of pulses. It must be India's endeavour to achieve self-sufficiency in respect of oil seeds and pulses and do away with imports.

Export policy

Export policy of the country should favour agricultural exports on a liberal basis but not at the expense of domestic needs. Stable export policies would help to sustain the markets that are developed over the years. Frequent changes in canalising and decanalising exports create confusion in the minds of importers and seriously harm the cause of exports. Banning an item for export should not be restored to suddenly (unless the circumstances so warrant) as this would completely destroy the confidence of the importer in regarding the country as a dependable source of supply.

Export marketing groups

Agricultural exports should be undertaken by strong and powerful export marketing groups rather than by all and sundry. Government may authorise selected export houses, trading houses and cooperatives to undertake agricultural exports. Confining agricultural exports to public sector corporations alone is not a right step. Export marketing groups will have more combat power in the international markets. Unlike in the case of manufactures, marketing of agricultural commodities to overseas is complex and calls for greater strength and sustaining power in view of the dominant position held by transnational corporations/multicommodity traders. (UNCTAD sources indicate that about 15 large traders control 85-90 per cent of globally traded cotton. This degree of control is paralleled in many other primary commodity markets. To cite but three major commodities—in the case of tobacco roughly 85-90 per cent of the stock is entering international trade under the direct control of six transnational leaf buyers; in bananas 70-75 per cent of the world market is controlled by three companies; in cocoa over 75 per cent of the world trade is controlled by five corporations). Indeed, the entire international trade in primary commodities exported by the developing countries continues to be dominated by transnational corporations. To fight these powerful trading groups, a developing country like India should take the lead in organising powerful marketing groups to deal in agricultural commodities to secure reasonable prices. The export policy should provide for clear-cut and lucrative incentives to export agricultural commodities.

Import policy

Import policy needs to be liberalised fully to facilitate imports of machinery, equipment, packaging materials and new technology to improve upon packaging and processing of food and plantation items. This would help in developing value-added items and to maximise foreign exchange earnings particularly in respect of exports of tea, coffee, spices, cashewnuts, HPS groundnuts, shrimps, buffalo meat, mango, other fruits and vegetables.

Global quota items

Measures should be adopted to consistently export such items which are governed by international quotas like sugar, coffee etc. In the absence of honouring allocated export quotas, there is the danger of India losing the export quota entitlements and there will be difficulties in reviving the quotas later.

Quality control

Stringent quality control in agricultural exports is necessary for India to remain as a stable exporter to world markets. Price competitiveness apart, a country must earn its name as a supplier of quality products. A product with inferior quality will surely turn away the importer and damage the reputation of the country. The recent export of tobacco from Andhra Pradesh to China by some unscrupulous traders created serious problems in Sino-Indian trade relations and caused headache for the Government of India to settle the issue.

The problem of aflatoxin will adversely affect the exports of groundnut meal from India and every effort should be made to remove this problem.

In boosting livestock and meat exports, it is necessary to eradicate the foot-and-mouth disease prevalent among the animals. In the absence of quality

standards, India cannot be reckoned as a reliable exporter. Saudi Arabia imposed a ban on the imports of livestock and meat from India on grounds of hygiene. Compulsory quality control of animals and meat prior to export will have to be enforced

Cooperation

It is necessary to ensure that there is proper cooperation and co-ordination between different Central Ministries, particularly between the Ministries of Commerce, Agriculture and Finance and the State Governments.

Although exports are a Central subject, agriculture is a State subject. This aspect clearly underlines the need for a hundred per cent co-ordination between the concerned Central Ministries and the State Governments. Ultimately the farm producion has to come from different states. While the Commerce Ministry indicates the various farm produce that are in demand in overseas markets, the quality and quantity of produce that are needed and the price realisations that could be made, it is the Ministry of Agriculture that formulates the policies concerning agricultural production at the National level keeping in mind the interest of the cultivators, the domestic consumption needs and the export market requirements. Cooperation and coordination between the Ministries of Commerce and Agriculture and the State Governments helps in generating agricultural surpluses to cater to the export markets

Rapport with the State Governments is particularly necessary to implement the policies laid down to augment agricultural production, increase productivity and to secure higher incomes for the farmers. Rapport between the State Governments and the Ministry of Agriculture at the Centre also helps considerably in procuring high prices for the farm produce as well as outlets for increased output. The Centre can also supply the results of research for higher productivity (high-yielding variety seeds and short duration variety seeds) and also other inputs to the States for expanding production. The commodities that need to be produced in large quantities by each State should be decided and a target fixed for the same so that the States work for achieving the targets. In the absence of any clear-cut purpose and direction, the State Governments may not be able to contribute anything more significant than what is already being done

Above all a fair degree of understanding and support is necessary from the Ministry of Finance to promote agricultural exports. Agricultural exports could be developed on a large scale through large subsidies where necessary. Subsidising agricultural exports is in vogue in all the countries exporting agricultural commodities not excluding the developed countries such as the United States, Canada, the European Common Market and Australia.

Research

Opportunities for agricultural exports through information on import market requirements, restrictions, quality specifications, health standards, price competitiveness, competing suppliers, need to be assessed on a continuous basis. This would help to remove the constraints to formulate national and realistic policies and to improve the competitive strength of India's agricultural exports.

It is appropriate to designate the Indian Institute of Foreign Trade, the specialist research body, as the National Centre for Agricultural Export Market Research to evaluate the market situation in respect of various commodities and products and to identify the market opportunities for India on a scientific and regular basis through surveys in the potential markets

Institutional set-up

Institutional set-up for agricultural exports is fairly strong in the country The Government of India, however, is contemplating to set up a Meat Board to integrate all aspects from production through marketing There are already plans to convert Spices Export Promotion Council into Spices Board to give it the necessary export-orientation and vigour. The Ministry of Commerce has a proposal to set up a Board for value-added items including tea, coffee, cashewnuts, HPS groundnuts, spices, shrimps, mangoes, buffalo meat, fruits and vegetables, cigarettes and cigars and Indian liquor The Ministry of Agriculture also has plans to establish a National Horticulture Board. The Ministry of Commerce has a proposal to set up an Agricultural Products Export Development Authority

There are already a plethora of organisations in the country There is, however, a strong case to strengthen the existing organisations by providing them necessary financial and technical support It is absolutely necessary to ensure that all the potential items of agricultural exports are covered by one existing organisation or the other. What is needed is policy support and effective co-ordination.

Export target

India has the requisite resources, capabilities and infrastructure to harness agricultural export potential The target of agricultural exports of Rs. 4,920 crores by the end of Seventh Five Year Plan i.e 1989-90 envisaged by the Tandon Committee on Export Strategy for the 80s is very modest. Keeping in view the vast and untapped production and export potential of agricultural products, it will be well within India's reach to hit upon a target of about Rs. 8,500 crores through agricultural exports alone by the end of Seventh Plan. The Table gives the broad groupwise targets of agricultural exports

Target of Agricultural Exports by 1989-90

	Rs. Crores
Plantation	2,100
Cereals and preparation	1,200
Commercial crops	1,800
Processed foods	1,000
Marine products	1,600
Fruit, vegetable & flowers	800
Total	8,500

Along with agricultural export effort, it is equally necessary to achieve self-sufficiency in edible oils and pulses mainly to consolidate the gains on the export front. The strategy for export development calls for complete export-orientation to our agriculture by adopting pragmatic policy measures to step up produttion and productivity, encouraging new investments, instituting attractive incentives, strengthening the existing infrastructure and creating new institutions where absolutely necessary, augmenting power resources and by intensifying overseas marketing research efforts. It is only then that India can emerge as an important exporter of agricultural products to world markets. The public, private and cooperative sectors have a big role to play in this national endeavour.

Conclusion

The strategy for agricultural export development should encompass all the aspects outlined above Along with India's Seventh Five Year Plan, agricultural export plan should be drawn up jointly by the Ministries of Commerce, Agriculture and Finance at the Centre and the State Governments Agricultural exports are a sure way to bolstar the foreign exchange earnings. □

Concern for health of the elderly

The Health of the elderly, which is already a major public health concern in industrialized countries is rapidly assuming a similar status in developing countries as well. The magnitude of the problem can be judged by the fact that over 50 per cent of all those above 60 live in developing countries. By the year 2000 this percentage is expected to exceed 60.

To review the Global Plan of Action on Aging in the context of the regional and national situation, a consultative meeting on "national plan formulation for the health of the elderly" opened at World Health House in New Delhi recently. Organized by the WHO Regional Office for South-East Asia, the meeting was attended by senior public health administrators, scientists and sociologists from the Member Countries in the Region, as well as representatives from United Nations agencies and non-governmental organizations concerned with the welfare of the elderly.

The meeting urged that in the formulation of national plans, the health care of the elderly should be an integral part of the primary health care approach that all countries had adopted as the strategy for achieving the goal of health for all by the year 2000. "National plans needed to be flexible and adaptable to the socio-economic, political and cultural traditions of each country", the meeting observed.

Referring to the need to encourage community participation in this programme, the meeting held that non-governmental organizations could make a very valuable contribution at the national, regional and international levels if their roles were suitably defined.

Considering that the WHO South-East Asia Region consisted exclusively of developing countries and constituted a fifth of the world's population, the health care of the elderly had to be seen in a broader perspective as health and development were closely interrelated.

The Regional Director referred to the strong cultural traditions in the Region which permitted the elders not only to remain a part of the family but also to play an honoured and useful role. Unfortunately, these traditions were being eroded in many countries due to urbanization, migration of population and other changes in the family structure. He urged that efforts be made, despite the socio-economic changes being faced by the countries, to perpetuate these cultural traditions and maintain them wherever possible. In this context, some examples of innovative approaches in the care of the elderly were given. In Thailand, for instance Buddhist monks were looking after not only the psychological needs of the elderly, but also their health needs. Traditional medicine too could play a vital role in an age group that was used to this system, the Regional Director added.

The three-day meeting, among other things, prepared guidelines for the formulation of national plans through the suitable adoption of the global plan of action formulated at the United Nations World Health Assembly on Aging in Vienna in 1982. The guidelines would have a special focus on India, using this as a model for drawing conclusions and suggesting recommendations. The meeting is also expected to identify the role of governmental, non-governmental and other agencies in programmes for the health of the elderly, at a national level. □

Industrialising backward areas, a myth ?

C. Thangamuthu and S. Palanivel

Incentives are being offered to entrepreneurs for setting up industries in backward regions for their speedy development as well as for providing employment to the local people. But, because of the ingenuity of entrepreneurs in locating their units, the efforts to industriallise backward areas have not brought about the desired results. The author cautions that these incentives can easily lead to greater inequality between backward and the developed regions.

THE POLICY FOR balanced regional development may consist of incentives and concessions to the entrepreneurs who come forward to set up their industrial units in the backward regions; or, on the negative side, the policy may aim at preventing further concentration of industries in the already developed regions.

Though tempted by the facilities offered by the government, the entrepreneurs do not respond instantaneously. Rather, they are reluctant to lose the infrastructural advantages and external economies available in the industrially developed regions. They, being governed by the impulse of 'economic gain' will try to measure meticulously the relative advantages and the disadvantages of setting up their firms in backward regions. Naturally, if the gains arising out of the incentives and concessions available in backward regions outweigh the additional cost and disadvantages of locating the firms in the backward regions, the entrepreneurs will make a positive decisions to migrate into those regions. Even then, some industries which are 'location bound' (tied to the sources of raw material such as coal, iron and steel, power generation, etc.) may not bother to move away from places of natural advantages

But it does appear that the costs of production of a substantial proportion of manufacturing and services industries are, within wide limits, not sensitive to the precise choice of location. (W.. Isard, 960). Such "foot-loose" industries, (whose locations are not strictly conditioned by regional characteristics may be successfully induced to move into the desired backward regions. But in the real world situation the problem is not so sipmle and predicatable

Because of these hurdles, firms may be reluctant to move into the unexplored regions, despite the positive inducements from the government. As J. C. Willamson would put it, "The spatial inequality, depressed areas, and backward regions appear to persist may simply suggest to some that internal factor flows (tending to reduce inter-regional inequality) do not occur wiht sufficient speed and quantity to offest the dynamic indigenous conditions which cause relatively faster resources augmentation and technological change in the rich developing regions (tending to increase inequality)" (J.C. Williamson, 1965).

The influence of government policy in attracting new firms into the backward region may thus face serious bottlenecks. And hence the impact of such a policy cannot be spontaneous and substantial. Moreover, it is possible that the entrepreneurs, who

take advantage of the facilities offered by the government, may not prove to be the real "innovators" in a strict sense. They cannot be considered as the 'risk lovers' because their main consideration in availing of these facilities might be to seek and enjoy the public patronage rather than face the challenges of the backward region. From the government's point of view, it is something akin to nursing and protecting the 'infant industries'.

Location

Against the above background, an attempt is made here to empirically analyse the behaviour pattern of the entrepreneurs in choosing the locations of their industries in Pudukkottai in Tamil Nadu. The district was declared industrially backward in 1974 and has since been receiving the package of incentives and concessions.

A very striking aspect of industrial location is that most of the entrepreneurs have made judicial and rational decisions in locating their units close as possible to the boundaries of this backward district and adjoining the relatively more developed district of Tiruchy, Thanjavur and Madurai. This has enabled them to enjoy both the advantages of the external economies of the more developed regions along with the facilities of incentives and concessions available for the backward region. Hence we find a concentration of industries around the borders of the district.

Such a pattern of spatial distribution (concentration tending towards the border areas) can be plausibly explained as follows : The economic self-interests which would better the prospects of a firm are crucial in deciding its location. In order to realise these the firm will, if possible, accept any condition in letter though not in spirit, and take full advantage of the situation. Technically, as per law, the location has to be within the borders of the backward district., And this stipulation for eligibility to enjoy the concessions and incentives, has been found to be fulfilled with the least strain. In other words, if the location is made far into the interior pockets of the backward region (with poor infrastructual facilities and lack of external economies), the firm is likely to develop serious economic constraints. Hence, to avoid such difficulties, the firm generally locates itself within the backward region only in the technical sense. For all practical or economic purposes, it may be construed as a unit of the adjoining developed region or district.

Linkages and economic implications

The outward linkages of the border-firms, i.e. interaction with the outside industries are likely to be more effective and pronounced than with the interior parts of the region itself. Stated differently, the spill-over effects of the border firms will help the development of the already developed regions. The very purpose of offering concessions and incentives for the development of a backward district has been ingeniously defeated by the entrepreneurs.

An informal survey of these border units reveals that most of the entrepreneurs as well as labourers employed come from the adjoining districts. Because of easy accessibility and other advantages, they retain their residences in the neighbouring districts and often commute daily to their work places. Thus the additional investment and establishment of new units in the backward region have not resulted in much generation of employment for the local labour. Nor have the incentives and concessions been fully utilised by the native entrepreneurs. Incentives and concessions have rather been "usurped" by the entrepreneurs and labourers from the neighbouring districts. The incomes generated by this additional investment and employment also largely 'migrate' to the neighbouring districts. This results in the gap between the backward district and the more developed districts widening still further. The territory of the backward district ultimately benefits the interests of the relatively developed districts.

There are, admittedly, other factors responsible for such a peculiar pattern of spatial distribution of industries, besides the infrastructural advantages of the adjoining districts. Mention should be made of : (a) powerful pull of the agglomeration economies accruing from certain large industrial centres located in the neighbouring districts; (b) marketing potentials of the neighbouring districts; (c) initiative and dynamic drive of the entrepreneurs from the neighbouring developed regions.

Border concentration

A good number of medium and small scale industries have sprung up along Tiruchy-Pudukkottai Highways, especially close to the border of Tiruchy-Pudukkottai district. Some of these industries (especially the fabrication and engineering units located in and around SIDCO Industrial Estate) have close interaction with BHEL, Tiruchy. These units are tied to BHEL, Tiruchy in the sense that the latter supplies the raw materials and takes back the finished products. But the fact that they have chosen to be within the boundaries of the adjoining Pudukkottai district indicates that they have made a judicious decision to enjoy both the external economies from BHEL and the concessions available to a backward district.

Similarly, some of the major units along Tiruchy-Madurai highways mear Viralimalai have found themselves within the district boundary of Pudukkottai. Most of the partners and also employees of these units are also residents of Tiruchy district.

Along the Thanjavur-Pudukkottai borders (but within the jurisdiction of Pudukkottai district) also, one finds a concentration of small scale units (chemical, metal-based production, and engineering). Just as there is a SIDCO sponsored Industrial Estate along Tiruchy-Pudukkottai border, there is another close to Thanjavur (near Gandharvakottai).

The Government, which has vowed to develop the backward district of Pudukkottai, is "unwittingly" encouraging the industrialisation of the border areas of the region which really help the development of the adjoining districts. The spill over effects of these border units are certainly stronger than the feed-back effects received by the internal regions of the district. The units near Thanjavur District also (as in the case of units nearer Tiruchy) are mostly owned by the entrepreneurs from Thanjavur District; and many of the workers continue to reside at Thanjavur and its sub-urban areas. Kunnandarkoil and Karambakudi are the other two noteworthy border centres (also close to Thanjavur) which have been benefited by the policy of concessions and incentives.

The picture becomes complete when we look into the industrial map along the Pudukkottai-Ramnad border. Though the latter is dry and hence agriculturally backward, it has a tremendous potential of entrepreneurship. The traditionally enterprising communities of Nattukkottai Chettiars, Naidus and Rajas have their roots in Ramnad District. And it is no surprise that these entrepreneurs have made the best use of the incentives and concessions available in the proximate backward district of Pudukkottai. Moreover, these communities are also found in the areas of Pudukkottai adjacent to Ramnad. Industrial units, medium and small, located near Ponnamaravathy, Thirumayam, Arimalam, Aranthangi and Avuddaiyarkoil are generally manned by the people living along the Pudukkottai-Ramnad borders. Even here, the beneficial effects of these units are strongly felt in Ramnad District.

Political and administration factors

Apart from the above pattern of border concentration all-around, the areas near the district headquarters of Pudukkottai town, do have some industrial concentration mostly due to political and administrative considerations. But some big industries were started prior to the declaration of this district as backward. The small scale units have, of course, come up in large numbers in and around Pudukkottai Town, thanks to the well-developed infrastructural facilities. But it must be noted that the district headquarters has not developed into a powerful 'growth pole' with forward and backward linkages (agglomeration economies) and hence does not wield a dominant influence over the industrial economy of the district. From a careful reading of the industrial map of the district, Mathur-Keeranur segment (close to Tiruchirapalli) perhaps emerges as the most strategic and economically powerful "growth pole". In terms of capital investment, value-added and employment, Mathur Centre again turns out to be the maximum contributor to the district economy. In terms of capital investment, Mathur excels all other industrial centres. Since this centre happens to be on the periphery of the district the impact is not so much felt inward as it is on the outskirts of the district.

Border or peripheral concentration of industries can be further empirically proved by comparing the distances between the industrial centres and the district borders on the one hand and that between the industrial centres and the central part of the district on the other (which in this case coincides more or less with the district headquarters of Pudukkottai town). Expectedly, the district is not exactly a smooth circle. However, the central point (Pudukkottai town) is approximately equidistant from all directions.

In spatial distribution of Industrial Centres we find that out of the 28 identified industrial centres (though not of equal industrial strength or concentration), as many as 13 centres are within 5 km of the borders and 9 centres lie between 6 and 11 km of the borders. Less than 25 per cent of the centres (6 out of 28) are more than 11 km away from the border. So, more than 75 per cent of the centres are situated within 11 km of the borders. Though the distance analysis may look crudely descriptive, it gives a clear and definite indication of the border concentration of industrial centres. The spatial-industrial map of the district gives a pictorial view of the border concentration.

The impact of policy about incentives and concessions offered for the industrial development of backward districts deserves careful spatial analysis. The study of the pattern of distribution of units in the district area (spatial dimension) becomes all the more important in some cases (like the present one) the border concentration may mean very little for the actual development of the backward district. This may also lead to growing inequality (though inadvertently) between the backward district and the adjoining developed districts. Above all, the ingenuity of the entrepreneurship in making the location decision is perhaps beyond conventional theorisation. □

Upward exports in 1984-85

A POSITIVE NOTE was struck during the first nine months of 1984-85 with exports increasing at a faster rate than the rate of growth of imports, thus initiating a reversal in the negative balance of trade trends which were witnessed at the end of 1983-84. This situation was brought about by a boost in exports which registered an increase of 18.8 per cent during the period April—December, 1984, a compared to the corresponding period of the previous year. Provisional trade statistics available for the first nine months of 1984-85 place exports at Rs. 8146.2 crores as compared to Rs. 6858.3 crores in the corresponding period of the previous year.

During the same period imports on a provisional base increased by 12.8 per cent it rose from Rs. 10,416.5 crores in April-December, 1983, to Rs. 11,746.1 crores in April—December, 1984, consequently reducing te margin of trade deficit. □

BOOKS

Management of firms

he Economic Management of the Firm: Edited y J. F. Fickering and T.A.J. Cockerill : Published India by Heritage Publishers, New Delhi-2, 24 pp : Price Rs. 180.

IT IS UNFORTUNATE that almost all the worth-hile books on management are written in the West id are based on Western experiences. The reason, appears, is that since management theory is essen-ally a generalisation of, and introspection on, actual anagement practices and decisions, one needs a imber of managers who are aware of the process by hich they are able to reach conclusions and are ticulate enough to express themselves adequately.

In India most firms are managed by members of ie family who own the firm (or, more often own a nall part of the capital but control it). They are un-kely to talk, far less write, about their experiences.

In any case in these firms a person's position in ie family tree seems to determine his worth as a ianager and his chances of rising in the hierarchy. fany of these firms are extremely successful how tactly, it is not clear. But one imagines that if these rms are to be used as case-studies, eugenics rather ian management theory should be the subject of udy.

The professional managers of the few firms that re professionally managed, may also have little onstructive contribution Most of their energies and me, too are spent on problems which are absent or lmost absent elsewhere, e g shortages, power-cuts hich are endemic and often unpredicatable, or in-ustrial disputes which turn out to be a power play etween groups of petty politicians of the locality nd, of course, the never-ending fight with govern-ient agencies over licenses, permits, quotas etc ackling these problems requires skills in lobbying, se of touts and influence-pedlars, cajolery, flattery r bribery. But not what are usually considered ianagement skills.

It is with a sense of relief that one turns to a theore-cal exposition of what management should be. In ickering's & Cockerill's "The Economic Manage-ient of the Firm" the authors seek to give theoreti-il and rational explanation of the decision-making rocess over the whole range of management func-ons. The book is a compilation of pieces written by enior academies in the field of economics and man-gement working in different institutions in Britain.

A conscious effort has been made, with fair suc-ess, to knit the different essays into a homogeneous treatise, the theoratical approach has been balanced by examples of real life experiences of various British firms. If the reader still finds an academic flavour in the exposition, it is because the authors have deli-betrately emphasistd economic analysis and the theo-retical approach. This is not bad as it imposes a rigor-ous mental discipline.

It has to be mentioned however that there is field which is entirely original in any of the chapters. Par-ticularly the chapters on the organisational structural production performance, personnel, marketing and financial management appear derivative. One who been exposed to a theoretical exposition of manage-ment might find a little new. In fairness, one should add that the authors do not claim originality. In fact, they refer the reader to a large selection of books and articles on each subject—there is a list at the end of each chapter which might be for some the most valu-able part of the book.

The book should be of great interest to students and managers who have experience but have not stu-died management as such.

A. C. BOSE

Pollution and slums

Environmental Challenge—A Global Survey : By Attar Chand. U.D.H. Publishers, 4078, Nai Sarak, Delhi 1985 Pages 350. Rs. 250.

THIS COMPENDIUM on the global environ-mental scene eminently stands out as the work of mental craftsman who has used his implements with the expertise of a designer, dissector, analyser and, above all, a fearless critic who cherishes intellectual inte-grity more than anything else. A reading of this book at once convinces us about what Max Nicholson said in the statement that "The pride of having reached the moon is cancelled out by the humiliation of hav-ing gone so far towards taking a slum of our own na-tive planet". Jagmohan environmentalist and the Governor of Jammu and Kashmir, has in his Fore-word to the book cautioned that in view of the basic difference in the nature of environmental problems of developing and developed nations, it would be a grave and tragic error for us to adopt the same approach that is being advocated in the West. "We cannot think in terms of limits of growth. For us development is not the cause of environmental inadequacies but the cure. We have to remove poverty which is the worst pollu-tant. And poverty cannot be removed without deve-lopment, industrialisation and urbanisation. It is only the imbalanced approach and ruthless exploitation of natural resources for immediate gains that should be avoided."

In the introductory chapter the author forcefully remarks that too often environment is defined in phy-sical terms alone. According to him, too often environ-ment is treated as a separate subject which is not

true. The environmentalist, the ecologist and the humanist have their own points of view. The environmentalist might prefer to leave the oil beneath Alaska's north slope untouched, so that wilderness environment can be preserved.

The task is only of satisfactory environmental management to establish the protection of the biosphere as a public goal or collective purpose. A formal statement of public intent is especially necessary because of the lack of historical precedent for comprehensive public responsibility for the quality of environment. However, in many cases public laws and statutes are inimical to ecologically based policies and as such, a clear declaration of intentions is absolutely necessary. Industry and other institutions producing pollution should be responsible for the local eco-system.

The book extensively examines issues like the parameters of enviornment, acid rain, air conservation and pollution, chemical weapons and biological warfare, etc. In the elaborated discussion on various aspects of global survey, Mr Attar Chand has very competently called in digests from several national and international publications for the benefit of researchers and administrators dealing with pollution and other environmental problems. The documentation is adequate and treatment quite lucid for an uninitiated reader

Navin Chandra Joshi

Econometrics

Applications of Econometrics by Julia Hebden ! Heritage Publishers, 4C Ansari Road, Daryaganj, New Delhi (1983), Rs. 180.

The CLAIM OF economics to be classified as a Science is furthered by application of mathematical and statistical tools in Econometrics. Textbooks on econometrics usually outline the theory while research findings are the results of application of theory to practice. The book under review is a mixture of both.

After an introductory chapter on the economeric models, the book discusses Distributed Lag models and Dummy Variables and their application. The Cobb-Douglas production function, and wage and price inflation models are explained with illustrations of research works of eminent econometricians, bringing out the utility and limitations of such analyses. Recognising the fact that the "production function" of individual firms assumes lesser importance in the context of macro-economic analysis, the book embarks on a very informative treatise on Input-Output analysis, with particular relevance to developing economies.

The book is intended for those who are already familiar with the basics of economic methods. The usefulness of the work is increased by incorporation of the abstracts of the research works on each topic, and by the suggested list for further reading. Though the book is priced at a level beyond the reach of an average students' budget, the contents would entitle it to be placed as a compendium for reference and consultation.

R. C. SRINIVASAN

For the disabled

Hand Book of Disabled in India by D. S. Mehta, Published by R. N. Sachdev, 7|15, Kirti Nagar, New Delhi-110015. First published 1983, pages 393, price Rs. 90.00.

THE BOOK UNDER review was written with the objective of creating the necessary social awareness and providing the requisite information to the potential beneficiaries so that they take maximum advantage of the available facilities. Part five of the book (p 157) deals with the facilities and concessions available to the disabled in India at Central level. Some of the most important of these are as follows :—

(i) Medical Rehabilitation includes physical, emotional, social, vocational and economic rehabilitation. The scheme of assistance to the disabled for purchase|fitting of aids| appliances is operated by the Ministry of Social Welfare ;

(ii) Educational facilities include different kinds of allowances, concessions and relaxations, Government of India Scholarship to the eligible disabled students;

(iii) Employment of the disabled : Reservation for the handicapped has been provided for class III and class IV posts (3 per cent). Moreover, 21 special employment exchanges are functioning for the disabled.

(iv) Travel and Convayence· The Ministry of Railways provides rail fare concessions to the disabled of special category and Central Government Employees are granted conveyance allowance;

(v) Tax Reliefs: Under Section 80-U, the handicapped person is entitled to a deduction of Rs. 10,000 on his assessment. There are also other types of tax reliefs.

The book contains information in details in respect of various types of facilities and concessions available to the disabled in India and, therefore, it is of immense value to the disabled people. Since many of our disabled people are neither aware of this book nor, in a position to spend Rs. 90.00 for it, therefore, its details need to be published periodically in newspapers for the benefit of the people concerned.

Debabrata Das

More treatment facilities for cancer, malaria and leprosy in Seventh Plan

FACILITIES FOR TREATMENT of cancer are being extended to 20 more medical colleges during the current financial year. The allocation for cancer treatment facilities has been doubled for this year. Sophisticated equipment such as whole body cat scanners, linear acceleraters, remote control treatment and planning systems would be purchased for the various regional cancer centres.

The limited figures available from the six Cancer Registries operating under Indian Council for Medical Research indicate an increase of about 1.2 million cases of cancer. About five lakh new cases are added every year. The trend will continue for decades to come with the increasing modernisation and industrialisation which will create the presence of innumerable environmental carcinogens. The changes in life style and habits like smoking, tobacco chewing and drinking have aggravated the situation.

Another situation peculiar to India is that cancer occurs in India at a considerably younger age than it does in developed western countries. It occurs 10 to 15 years earlier in India. The most common cancers in our country are cancer of uterine cervix in women and the oral cancer in men. These types of cancer represent about forty per cent of all cancer cases in the country. They are predominantly environment-related and have a strong socio-cultural relationship. But these are preventable. By disseminating information about symptoms of the disease through health education and mass media, prevention of the disease and early treatment of cases would be ensured.

For early detection and treatment of malaria cases and to prevent deaths due to malaria, 1,28,376 fever treatment depots and 2,52,523 drug distribution centres have been established. Further, 80 districts are under P. falciparium containment programme covering six million people.

The anti-leprosy vaccine developed by the Indian Cancer Research Centre, Bombay will be put on human trials during 1985-86 under the auspices of ICMR. A few more Regional Leprosy Training and Research Institutes of Teetalmari (Bihar), Pagiri (Andhra), Magadi (Karnataka) and Baroda (Gujarat) will be set up during the year. Three centres are already functioning. Leprosy patients have been cured with the application of multidrug regimen therapy within two to three years. 12 districts have been taken up for this treatment. Three more districts will be taken up shortly.

All the 98 highly endemic leprosy districts will be brought under the multi-drug regimen treatment during the Seventh Plan period. This will help in arresting the disease in 60 per cent of the known leprosy cases.□

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Major thrust for oil search in Seventh Plan !

Refining capacity to be increased

THE SEARCH FOR oil in hitherto less explored basins will receive a major thrust during the Seventh Plan. Exploration efforts will increase three times in a bid to produce indigenously 40 million tonnes of crude oil per year by the end of the plan period.

The Sixth Five Year Plan target of 93.4 million tonnes of crude production had been exceeded. The country produced during 1980—85 a total of 102.77 million tonnes of crude oil from its onshore and off-shore fields. In fact, crude production rate had been almost trebled during the Sixth Plan with extraction of 28.99 million tonnes of oil in 1984-85 as against 10.5 million tonnes in 1980-81.

At the end of the Seventh Plan, it is estimated that the demand for petroleum products will have grown to 54 million tonnes necessitating imports to the tune of 14 million tonnes of crude. Massive efforts are therefore required to conserve energy to reduce dependence on imports.

Indigenisation of oil field equipment and services is being encouraged and some major equipment like well-platforms, process platforms, jack-up rigs, drilling rigs, drillships, supply vessels are now being manufactured indigenously. Private Indian companies are also being encouraged for providing services in high technology areas through suitable tie-ups with reputed foreign companies.

At present, annually 5961 million cubic metres of associated gas is being produced. The current mismatch between production of associated gas and offshore facilities for its compression will end by 1986 when two major gas compression complexes will have been commissioned.

It is also proposed to gather gas now being flared in isolated fields in the Gujarat region. In the Eastern region where gas is being flared primarily due to lack of demand and absence of some connecting lines, steps are being taken to have a gas grid in Assam.

A separate corporation—Gas Authority of India Limited—has been set up to process, transport and market natural gas. GAIL has been entrusted with the responsibility to implement the Rs. 1700.17 crore H-B-J gas pipeline project. This, will be the first major cross-country pressure gas pipeline in the country.

With the commissioning of Mathura Refinery during the Sixth Plan and the completion of expansion of refineries at Vishakhapatnam, Madras and Bombay, there are now 12 operating refineries with a total installed capacity of 45.55 million tonnes as against 11 refineries with installed capacity of 31.80 million tonnes at the beginning of the Sixth Plan.

The Government has also approved the proposal to set up a new six million tonne refinery at Karnal in Haryana along with augmentation of capacity of Salaya—Viramgam and Mathura pipeline with extension to Karnal. The project is estimated to cost Rs. 1359.07 crore.

The Government has also agreed in principle to set up a six-million tonnes refinery at Mangalore in Karnataka. In addition, there are several other proposals under consideration for expansion and modification of existing refineries. When implemented, all these projects together will increase the total refining capacity to around 58 million tonnes by the end of the Seventh Plan.

The LPG availability has more than doubled in the last five years with production during 1984-85 being about 8,63,000 tonnes. During the Seventh Plan, additional 16,00,000 tonnes of LPG is expected to be available and it is planned to use it largely for the benefit of the domestic sector.

Between 1981-82 and 1984-85, the oil companies had released over 56 lakh new cooking gas connections. In the coming five years it is proposed to release approximately 96 lakhs new connections to the consumers all overthe country.□

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Balanced Urbanisation, a must !

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NEXT ISSUE

Focus on rural banking

August 15 special

Dry-land farming to raise food production during VII Plan.

A MASSIVE ATTEMPT involving development of dry-land farming and full exploitation of irrigated land is to be made to achieve the Seventh Plan final year food production target of 185 million tonnes. The dry-land farming which accounted for 73 per cent of the cultivated area but contributed only 42 per cent of the total foodgrains production will be accorded high priority and a National Dry Land Farming Project (NDLFP) will be initiated during the Seventh Plan to increase the productivity and income levels of millions of farmers dependent on rainfed agriculture.

Since scientific dry-land farming aimed at appropriate treatment of land for conservation of moisture, priority will be given for proper land and water management.

The dry-land farming strategy will also consist of providing agricultural inputs like better seeds, fertiliser, pesticides and latest technology to the farmers. A new technology is being developed and the techniques are being perfected under pilot projects in Maharashtra, Madhya Pradesh, Andhra Pradesh and Karnataka.

In recognition of the farmers requirements of irrigation, especially in the case of small and marginal farmers, a special project had been launched under which each block will be allocated Rs. 5 lakh out of which nearly 70 per cent will be used for minor irrigation programmes.

To ensure that cultivation is done on scientific lines, the Union Ministry of Agriculture and Rural Development has also decided to open Krishi Vigyan Kendras in all districts of the country. At present there are only 89 such Kendras.

At present, irrigation facilities are being underutilised. During the Seventh Five-Year Plan, every affort will be made to make full use of irrigated land and also increase its productivity.

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New thrust to economy!

L.K. Jha

The author, a noted economist, says that the new economic policies initiated by the Prime Minister do not imply any change in the basic goals and objectives to which nation committed itself long ago. The time consuming procedures and controls responsible for sluggish industrial growth are being removed. The main objective of the new economic policies, the author points out, is speedier growth with social justice and less reliance on external assistance.

IN THE ON-GOING debate on the new economic policies of Government, there are many who assert, some hopefully, others regretfully, that they signify a major departure from the basic objectives of planned development. This is because too many people seem to believe that controls are the pillers of planning, and today many controls are being eased or removed. In actual fact, the system of controls that we have was evolved during World War II and not in the context of planning. It did well in the beginning. Today it is responsible for slowing down the pace of industrial development. In order to understand why this is so, it is necessary to look at the evolution of the control mechanism in its historical perspective.

How controls came to be ?

When planning started, in order to ensure that capital which was very very scarce was invested in accordance with plan priorities, the principle enshrined in Section 144 of the Criminal Procedure Code was extended to industry. A law was enacted which prohibited investment in a number of key industries, except after getting a licence from the government The aim, of course, was not to discourage such investment but to ensure that there was not too much in some areas and too little in others In the Nehru era, it took no more than 3 months or so to get a licence. Once the licence was granted, all other clearance and assistance from governmental agencies became available without further questioning

In later decades complexities began to creep in The industrial licensing machinery became the instrument for achieving all kinds of other objectives If there were districts which had no industry, every applicant for a licence was told that he must go to one of them or else he would get no licence. Positive measures to make backward areas more attractive for industries were neglected. What was forgotten was that a control is like a string You can pull with it but cannot push with it.

Competition discouraged !

What made matters worse was that the licensing authorities began to pursue policies which stifled competition If some units in an industry had idle capacity, because they could not sell their products for reasons of quality, price or any other, their competitors would not be given permission to expand their capacity, or even to increase their output from installed capacity. Further, after clearance from industrial licencing angle, separate scrutiny began to be made of such things as the import of capital goods the terms of foreign collaboration, if any, as well as under the provisions of the Monopolies and Restrictive Trade Practices Act and the Foreign Exchange Regulation Act.

With the growing proliferation of controls and controllers, the clearance necessary from government before the implementation of the project could start, began to take years. Since another few years were

taken in setting up the factory and starting production, few major projects could be completed during the plan in which they were initiated. The sluggishness was even more pronounced in public sector projects because they needed to obtain government approval even in the implementation stage, when placing orders for plant and machinery and when undertaking construction work. Many public projects included in one plan would go into production not in the next plan but in the one following it

Industrial growth affected!

In consequence, the rate of industrial growth declined from 7.4 per cent in the 1950s to 4 3 per cent in the 1970s—even though, over this period, the rate of savings in the community had more than doubled and the paucity of capital which had necessitated industrial licensing had greatly eased.

Time over-runs in the completion of projects led to cost over-runs. Prices began to rise even faster than costs because, with the rigours and dilatoriness of industrial licensing, demand always exceeded supply. In a sellers market, products could sell regardless of price and quality. Only in export markets, they could not compete. So, we began to have a huge deficit in our external trade which got covered by external aid and borrowings and inward remittances from Indians earning abroad

Bold initiatives taken!

The late Prime Minister, Mrs. Indira Gandhi, therefore, decided to make a thorough overhaul not only of the control mechanism but of economic administration as a whole. She set up the Economic Administration Reforms Commission (EARC) which I chaired for over three years. However, even without waiting for its reports, she took a number of bold decisions. She substantially relaxed the price and distribution controls over cement. As a result, the black marketing and corrupt practices in this area came to an end. Domestic production shot up and imports became unnecessary

She declared the year 1982 to be the 'Year of Productivity' which led to the lifting of some of the restraints on maximising production from installed capacity, which the industrial licensing authorities had imposed. The industrial growth rate took an upturn which would have been even more pronounced if power shortage had not been there. While it would be rash to assert that the new policies initiated by the Prime Minister, Mr. Rajiv Gandhi, are necessarily those which she herself would have launced but for untimely death, I have little doubt in my mind that the steps which are being taken do not imply any change in the basic goals and objectives to which the nation committed itself by opting for a socialistic pattern of society. Within days of his coming to power after the elections, Prime Minister Rajiv Gandhi declared:

> "In a few months, we shall begin the Seventh Plan. The war against our old enemies—poverty, unemployment, disease, ignorance—continues. In the weeks ahead, we shall review our existing policies and programmes to ensure that our basic objectives of growth with justice are realised within the stipulated time-table."

The emphasis then is on speed. The time-consuming procedures and the controls responsible for them are being removed.

Competition, a must!

With our population increasing at the rate of more than a million a month, time is the one resource of which we are most short, which we simply cannot afford to waste. Investment in a range of industries judged to be of national importance will no loger to required to seek a multitude of clearance. in the course of which those, who know what they are about, have to subject themselves to scrutiny by those who know much less. However, let no one believe that we are sliding back into a laissez-faire economy. While industry will have greater freedom from controls. it will no longer enjoy the freedom it has had from competition—internal and external.

The importance of giving enterprises freedom to take initiatives, and of subjecting them to the forces of competition is recognised even by countries where the instruments of production are entirely state-owned.

In India, with a large private sector being an integral part of our mixed economy, some controls must be there to ensure conformity with plan priorities. Since almost all major projects need assistance from financial institutions which are in the public sector, they can not only evaluate the soundness of investment proposals far more effectively than the Ministries can, they can also observe the priorities which government lays down for them.

Reorient fiscal measures!

Further, fiscal policies will need re-orientation, firstly to, encourage or discourage, as may be, appropriate, investment in particular fields; secondly, to help lower industrial costs, which have certainly got inflated by the cascading effect of excise duties and customs duties on capital goods, new materials and other inputs. Reduced costs will not only lower prices and bring more products within the reach of those with low incomes, they will also make our products more competitive in export markets so that the economy gains in self-reliance. Speedier attainment of our goals of growth with social justice with less reliance on external assistance can thus be said to be the main objective of the new economic policies. □

(Courtesy : All India Radio)

Rural banking and its challenges

Rajendra Singh and V. K. Jain

Many of the rural branches of banks are becoming economic dead weights with ever-mounting overdues. The authors point out that this situation can be averted if there is proper expansion planning before opening the branch and later proper supervision of the end use of credit. Government should also provide certain basic infrastructural facilities.

THE COMMERCIAL BANKING system has taken a big leap forward since nationalisation in 1969 when there were only 8262 Bank branches with total deposits of Rs. 4665 crore and advances of Rs. 3609 crore. In contrast the total number of branches has gone up to nearly 41000, deposits Rs. 55,202 crore and advances to Rs. 41653 crore as on July 29, 1983. The number of branches upto March 1983 was 41182 out of which nearly 21932 (more than 50 per cent of the total) were in rural areas.

Assistance to agriculture has become the mainstay in the operations of banks in the country giving the entire banking industry a rural orientation. From the days of affluent depositors and large borrowers, banks have come a long way in extending banking facilities to the economically weaker sections, at their door step.

The drawbacks

With the rural orientation of banking over the last 15 years, commercial banks have succeeded in channelling sizeable amount of credit to priority sectors. Qualitatively such extension of credit lacked direction and failed to fulfil the social objectives of planning as envisaged. The main drawbacks are:

(1) The un-coordinated lending and lack of effective supervision in follow up operations has perhaps, encouraged diversion of credit to non-productive purposes.

(2) Mounting overdues have been a matter of concern for lending institutions. About half the direct loans ot commercial banks to agriculture sector are overdue. To accelerate the flow of credit to rural areas and to extend it to larger number of beneficiaries, it is necessary to ensure that indent overdues and irrecoverable loans are kept minimum. Effective supervision of end use of funds is, therefore, of utmost importance.

(3) With the mass opening of rural branches, profitability of banks have been eroded. Since the quantum of advance per borrower is small in priority sector and close follow up and supervision is involved in ensuring repayment, the cost of commercial credit becomes excessively high. Though currently losses incurred in financing priority sectors are absorbed by banks because of the higher profitability of advances to larger borrowers in other sectors, this problem is likely to assume importance in coming years when priority sector advances are expected to rise significantly as per RBI guidelines.

Co-ordination in lending

How should commercial banks meet the credit requirements of farmers? And how to ensure that

the farmers derive maximum benefit in the form of improved incomes out of loans availed from banks? These important questions were examined in detail by an Expert Group appointed by the Reserve Bank, with Dr. Gunvant M. Desai (Professor, Indian Institute of Management, Ahmedabad) as Chairman. The group recommended that those State|Union territory Governments which have not yet established the office of Director of Institutional Finance should do so without further delay. Instructions must be given to district administration, ground water departments, directorates of agriculture and other concerned departments to provide data to the agencies formulating agricultural credit schemes. The state governments should share the responsibility for recovery of loans in respect of schemes, sponsored by them. The branch managers of banks operating in a block may be invited to the meetings of Block Development Committees convened to discuss institutional credit matters.

But in actual practice such co-ordination from state government functionaries is not coming forth They are only interested in achieving physical targets and getting subsidy amount adjusted. This is high time that the Government Departments and the Banks worked jointly especially in the identification of target groups as also for the preparation of block level plans This would require proper understanding of the concept of Integrated Rural Development Programme and the delineation of the role of various functionaries for their accountability. Adequate staff has to be provided at all levels by the government as well as the banks. The functionaries dealing with different departments at the block level should essentially be brought under the administrative control of the Block Development Officers. At present they are working for their departments independently in most of the states.

As far as the understanding of IRDP is concerned, seminars should be conducted at the district level every year and higher officials from the State Government should participate. Emphasis in such seminars should be on fact-finding and not fault-finding so that there is better mutual understanding and desired co-ordination amongst the different functionaries is achieved.

Mounting overdues

The problem of recovery of loans granted to the priority sectors particularly agriculture has remained a constant source of anxiety for the banks and a considerable amount of bank funds remain unrotated. On an average banks have to bear the burden of about 50 per cent overdue in agricultural loans and this results in curtailing the recycling of funds, denying several new deserving cases their share in institutional credit.

The report of CAL COB (Committee set up in April, 1979) reveals that (a) faulty systems|procedures in regard to identifications|selection of borrowers, (b) deficiencies in processing of loan applications and disbursement procedures, (c) lack of supervision of end use of credit, (d) wilful default, (e) natural calamity, or (f) infructuous investments are responsible for high level of overdues.

While the banking system can not remain indifferent to the hardships of the small borrowers, caused by the economic environment, any laxity in recovery would be self-defeating. The banks should provide adequate staff for proper follow up and to ensure the end use and recovery of banks' dues. Although most of the states have enacted legislation on the basis of the Talwar Committee recommendations, in some cases where such legislation has been passed either the rules have not been framed or the machinery for the execution of the rules has not been set up.

The setting up of recovery tribunals to cope with the mounting arrears of bank advances by public sector banks much on the lines as in Britain and France has been glibly talked about but not implemented so far. The proposal aims at setting up of an adjudication office at the district level and a tribunal at the state level and an apex body which would be called as "Central Board for Recovery of Bank Dues" a three tier structure which will go further than the recommendation of the Talwar Committee which stressed the need for recovery of bank dues through certificate proceedings as arrears of land revenue. Although bank credit of about Rs 10,000 each is supposed to have been extended to 13 million accounts forming 93 per cent of the total number of borrowal accounts which is said to be a big step forward towards social banking, at least Rs. 15 out of Rs. 100 advanced to the priority sector and weaker sections of society have not been recovered.

It would be worthwhile to mention here that IBA has approached the Reserve Bank with certain proposals aimed at reducing the overdues percentage. These include provision for recovery of agricultural loans under the Public Demands Recovery Act, appointment of special officers exclusively to look after the recovery of commercial bank loans and extension of the period of limitation from three to seven years.

Profitability

The subject of declining profitability has been widely debated in recent years. An impression seems to be gaining ground in some quarters that the concept of profit is inconsistent with the role of social banking But this is not a practicable proposition. Nor can we think of operating on a 'no profit, no loss' basis, which would amount to sacrificing the generation of internal resources and thereby the potential for growth. Apart from giving a fair return on capital (fair dividend on the compensation amount paid by the Government in the case of nationalised

banks, adequate provision has also to be made for commercial risks and this can come only from profit.) If the banks fail to build up adequate reserve to absorb future losses, these would ultimately have to be met by the society whose economic well-being they are supposed to bring about.

The rising operating cost, setting aside 40 per cent of the lendable funds to the priority sectors, allocation of 1 per cent for DRI loans, stickly advances and the opening of many uneconomic branches in the rural areas have led to the steady erosion of bank profits. It is worthwhile to mention the Nariman Report which has rightly warned that "The additional burden arising out of mass opening of banks' branches in rural areas would adversely affect the resilience and viability of banks to face unforeseen situations. What is needed is to strike a reasonable balance between the imperative need to extend banking facilities to the rural areas and the prudent desirability to sustain viability of banks."

A large number of rural branches opened in recent years are lagging behind in achieving their goals primarily because of non-exercise of due care and attention in the initial stages. It is estimated that it takes 5 to 6 years for a branch especially in rural areas to make itself viable. The banks should come out with a clearly defined branch location strategy based on (a) determination of the operation area and total number of branches to be opened over the area, the areas served by a branch and the population served by it, (b) the deposit potential should be ascertained considering factors like population (urban population| working population, literacy ratio, agricultural labourers, etc.) Mr Narsimham former Union Finance Secretary, while delivering the valedictory address at the three-days Bank Economists' Conference, 1983 organised by Central Bank of India demurred on the argument of the banks that branch expansion into rural and semi-urban areas was uneconomic in that the new branches failed to be remunerative, at least in the initial years. This was according to him, perhaps correct in a narrow accounting sense. A branch in the rural and semi-urban areas was primarily a deposit centre, at least initially and if it did not lend enough, it perhaps failed to earn income commensurate with the expenditure on it and then was termed to be unremunerative.

In evaluating the remunerative character, a great deal depended on the transfer pricing involved in the funds being made available by the deposit centre to the head office for deployment elsewhere in advance centres which by definition were deemed remunerative assuming that the income that accrued was actual and not book entry as often happened with sick or overdue accounts.

Many of the banks have made considerable progress in evolving appropriate norms for transfer pricing. Perhaps, the demands of both accounting and equity out of the stipulation of cash and liquidy ratios were paid a rate at least equal to the average of the banks earnings on its credit profitfolio and correspondingly, the advance centre were charged this rate plus a spread to cover central office expenses. This would be truer measure of the opportunity cost of funds and if this were done, the question of unremunerative deposit centres might not arise. (c) The credit absorbing capacity of the area under question should be assumed, considering such economic variables as cultivated land, intensity of cropping, facilities of irrigation, infrastructure, small scale industries, market facilities, co-operative societies, and percentage of working population.

Rural lending

The original banking concept, based on security oriented credit, has been broadened to the social banking concept which is based on purpose-oriented credit for development. The social banking concept calls for a shift from urban-oriented lending to rural oriented lending, a shift in the right direction. Social banking should be aimed at 'Better the village, better the nation" concept. But opening of new branches in rural areas without proper expansion planning, proper supervision of the end-use of credit, and without creating basic infrastructural facilities, is just to allow them to grow as mushrooms and remain as mere flagposts which will become an economic deadweight.

It is hightime that the Government did make provision of other infrastructural facilities like transport, communication, marketing etc. in addition to the coordination of banking facilities.

Banks in rural areas do not have adequate staff for each loan to be supervised in detail. The question arises as to how to overcome this problem? The obvious solution is to equip the rural branch with sufficient staff and add a nominal charge to their general handling charges, or the Government provides a hidden subsidy in the form of more trained staff from budgetary sources. Either the banks or Government would also have to provide specialised training for such loaning follow up.

But before such investment either by bank or by Government is decided upon, it may be worthwhile to try out the idea in a few pilot projects and to try and find out as to how much the loan output ratio can be increased by constant nursing of the accounts. To the productivity of each loan could be added some returns from the demonstration effect of better techniques on nearby non-loanees. Similarly, the losses due to inefficient utilisation of loans could be calculated, not only for the farmer, but also for the country as a whole. Thereafter, cost benefit analysis could be worked out before a final decision is taken. Such detailed loaning follow-up would also provide feedback to help improve the working of the credit delivery system and even loaning norms could be perhaps changed accordingly.

Helping the tribal farmers !

[A Case Study]

Dr. R. K. Pandey and
Dr. P. L. Guglani

An appraisal of disbursement of agricultural loans to tribal and non-tribal farmers of Ratu Block in Ranchi district of Bihar showed that adequate demand for credit was not forthcoming from tribal farmers. The authors feel that effort is required to be made by extension agencies to prompt tribal farmers to take to new agricultural technology and thereby increase their demand for credit.

AGRICULTURE IS THE mainstay of majority of our people in India. But owing to low or negative savings farmers are unable to invest adequately on their farms. Therefore unless credit is made available to the weaker sections on suitable terms and conditions, the tempo of agricultural revolution cannot be maintained. As such the timely availability of agricultural loans in adequate quantity tends to become a prerequisite for a substantial agricultural growth. It is in this context that agricultural credit has assumed an important role in our national agricultural policy. However, the nationalisation of 14 major commercial banks in 1969 and another 6 commercial banks in 1980 have given a new dimension to the disbursement of loans to tribal and non-tribal farmers.

It was decided to undertake a micro level study in Ratu block, Ranchi district (Bihar) to assess the quantitative and qualitative performance of institutional finance in general and to tribal farmers in particular. It is hoped that this study will facilitate in evolving effective policies and programmes for future loaning policies of the financial institutions.

Methodology

For this study, Ratu Block of Ranchi District, Bihar was purposively selected because this block was dominated by the tribal farmers. Secondary data were collected from six financial institutions viz., (i) Farmer's Service Cooperative Society, (ii) Land Development Bank, (iii) United Bank of India, (iv) Bank of India, (v) State Bank of India and (vi) Government, which were extending loans to the farmers of this block. Time series data of 11 years (1971-72 to 1981-82) were collected from the record of each financial institution engaged in financing Ratu Block.

Linear growth trend equations were fitted to the time series data. Linear growth trend equations was $Y=a+bt$ where Y=Puropsewise and bankwise loan distribution,

t=Time (Period),

a=Intercept (Constant)

b=Regression coefficient or trend value

Further, linear growth rate was defined as :

$$GR = \frac{b}{\bar{y}} \times 100$$

Where GR=growth rate (linear),

$\bar{Y}$=mean value of dependent variables.

By using ordinary least square, the parameters 'a' and 'b' were estimated.

Findings

This study revealed that the district was well served by credit institutions such as cooperatives and branches of nationalised banks. Short-term loans advanced by various financial institutions to tribal and non-tribal farmers in 1971-72 were of the order of Rs. 19.71 and Rs. 55.66 thousands respectively and it increased to Rs. 462.39 and Rs. 693.67 thousands respectively in 1981-82. The results revealed that the loans advanced were more in case of tribal farms as compared to non-tribal farms.

Term loans

Term loans advanced by the financial institutions in 1971-72 were Rs. 48.60 and Rs 139.00 thousand to tribal and non-tribal farmers respectively which increased to Rs. 563.09 and Rs. 1005 49 thousand respectively in 1981-82 It was found that the amount of loan advanced was higher in case of non-tribal farmers as compared to tribal farmers which probably indicate that the non-tribal farmers took greater interest in improving upon their farms.

Total agricultural loans

Total agricultural loans advanced by financial institutions to tribal and non-tribal farmers were Rs. 68.31 and Rs. 194.66 thousand respectively in 1971-72 which increased to Rs. 1025.48 and Rs. 1699 16 thousand respectively in 1981-82. The data showed that the increase was more in case of tribal farmers as compared to non-tribal farmers. Overall picture showed that since the inception of multi-agency approach in financing agriculture, financial institutions have been playing a positive role in financing agriculture in general and tribal farmers in particular.

Trends in advancement of agricultural loans

It may be seen from Table I below that there was an increasing trend in disbursement of agricultural loans to tribal farmers by way of short-term loans and term loans as compared to the non-tribal farmers during the period under study. The mean values of short term and term loans advanced to tribal farmers were Rs 179.32 and Rs. 150 59 thousand respectively whereas in case of non-tribal farmers the mean values of short-term and term loans were Rs. 295 48 and Rs. 373 69 thousand per annum respectively The linear growth rate was found to be 20.65 and 30 66 per cent per annum during the period from 1971-72 to 1981-82 of short-term and term loans respectively advanced by institutional agencies to tribal farmers, but in case of non-tribal farmers it was found to be 20.13 and 25 13 per cent per annum respectively. Overall linear growth rate of agricultural loans advanced by financial institution was found to be higher in case of tribal farmers which was 23.56 per cent per annum than those of non-tribal farmers which was 22.92 per cent per annum.

Trends in agricultural loans Advanced to Tribal and Non-Tribal Farmers in the Ratsi Block (1971-72 to 1981-82)

(Growth rate per cent per annum)

Type of Loan	Tribal Farmers			Non-Tribal Farmers		
	Mean Value $(\bar{y})$	Trend Value (b)	Linear Growth	Mean Value $(\bar{y})$	Trend Value (b)	Linear Growth rate
Short-term loan	179 32	37 03	20 65	295 48	59.47	20 13
Term loans	150 59	46 17	30 66	373.69	93 92	25 13
Total loans	329 91	77 74	23 56	669.17	153.38	22.92

Note : Mean value $(\bar{y})$ and Trend value (b) were expressed in Rs. thousand per anuum.

The study revealed that the role of institutional agencies in advancing agricultural credit showed an increasing trend both in the case of tribal and non-tribal farmers although more positive role was observed in case of tribal farmers.

Participation of different financial institutions

Farmer's Service Cooperative Society came into existence in Ratu Block of Ranchi district (Bihar) in 1975. This Society was sponsored by the Bank of India which was the 'Lead Bank' of Ranchi District. A positive trend advancement of loans was noted both in case of tribal and non-tribal farmers. It may be seen from Table-2 that the linear growth rate of agricultural loan was found to be 19.51 and 21.16 per cent per annum of agricultural loan advanced by Farmer's Service Cooperative Society to tribal and non-tribal farmers respectively. This showed that Farmer's Service Cooperative Society advanced more loans to non-tribal farmers as compared to tribal farmers

Table 2

Trends in share of various financial institutions in total agricultural financing to tribal and non-tribal farmers in Ratu Block from 1971-72 to 1981-82

(Growth rate per cent perannum)

Particular	(Tribal Farmers) Mean Value ($\bar{y}$)	Trend Value (b)	Linear Growth rate	(Non-Tribal Farmers) Mean Value ($\bar{y}$)	Trend Value (b)	Linear Growth rate
Farmer's Service Cooperative Society	198.90	38.80	19.51	458.47	97.00	21.16
Land Development Bank	32.53	10.79	33.17	54.56	8.79	16.11
Government	14.91	—2.77	—18.58	12.88	—2.60	—20.11
United Bank of India	108.77	19.29	17.73	237.91	37.98	15.96
State Bank of India	112.48	46.74	41.55	182.78	85.53	46.79
Bank of India	8 64	—0.52	—6.02	7.73	—0.38	—4.92
TOTAL	329.91	77.74	23.56	669.17	153.38	22.92

The Land Development Bank have entered into farm financing by way of long term loan from the very beginning. A positive trend was observed in advancing loans to tribal and non-tribal farmers. The linear growth rate of agricultural loans was found to be 23.17 and 16.11 per cent per annum, for tribal and non-tribal farmers respectively. It was observed that Land Development Bank tended to increase agricultural loans more to tribal farmers as compared to non-tribal farmers.

From the analysis it is evident that there was a continuous declining trend in advancing agricultural loans by the Government to tribal and non-tribal farmers. The linear growth rate was found to be —18.58 and —20.19 per cent per annum of agricultural loans advanced by Government to tribal and non-tribal farmers respectively. It was found that due to the entrance of commercial banks in farm financing since the inception of multi-agency approach, the flow of agricultural loan through block office showed a declining trend.

United Bank of India entered into farm financing from the very beginning. A positive trend was observed in advancing agricultural loan to tribal and non-tribal farmers. The linear growth rate of agricultural loan was found to be 17.13 and 15.96 per cent per annum to tribals and non-tribals respectively Increasing trend was noted in favour of tribal farmers.

State Bank of India entered into farm financing in Ratu Block in 1978-79. A positive trend was noted in advancing agricultural loan to tribal and non-tribal farmers. Linear growth rate was found to be 41.55 and 46.79 per cent per annum of agricultural loans advanced by State Bank of India to tribal and non-tribal farmers respectively. It was observed that State Bank of India had shown increasing trend in advancing agricultural loans to non-tribal farmers as compared to tribal farmers.

Bank of India had entered into farm financing from the very beginning but after 1979-80, it routed its agricultural loans in Ratu Block through its sponsored society (F.S.C.S.). Some sporadic farm financing were made by the Bank of India after the inception of Farmer's Service Cooperative Society in 1975 to 1979-80. The linear growth rate showed a declining trend as it was found to be —6.02 and —4.92 per cent per annum of agricultural loan advanced to tribal and non-tribal farmers respectively.

The overall picture of agricultural loans advanced by financial institutions showed more increasing trend in case of tribal farmers as compared to non-tribal farmers. The linear growth rate was found to be 23.56 and 22.92 per cent per annum of total agricultural loans advanced by various financial institution in tribal and non-tribal farmers respectively. A comparison of the different financial institutions in advancing agricultural loan showed that the Farmer's Service Cooperative Society and State Bank of India played a greater role in financing non-tribal farmers.

Conclusion

Of late, government has recognised the importance of less privileged classes of our society particularly tribal farmers whose economic and social conditions have to be promoted on priority basis. Hence various developmental programmes as well as new 20-Point Programme were launched by the Government to raise their economic and social conditions. The approach of the financial institutions changed from security-oriented lending to viability-oriented lendings. Thus, the financial institutions have been directed to play a positive role in favour of less privileged classes of society. From the above analysis it has been found out that the institutional agencies are playing dynamic role in the pulift of tribal farmers by way of advancing agricultural loans for their economic development.

This study has also indicated that the flow of institutional finance has shown an increasing trend to help both the tribal and non-tribal farmers. Rather some of the financial institutions have advanced more loans to non-tribal farmers than the tribal farmers. This may be due to the fact that demand for credit is not orthcoming from the tribal farmers. In such a case an effort is needed by the extension agencies to make the tribals to take to new technology of agriculture and thereby increase their demand for credit and raise their level of farm incomes. Such a step can help to lift the tribal farmers from the morass of poverty and destitution and bring them into the mainstream of national development.

(Continued on page 28)

A long way to go!

Dr. Markandeya Jha

While calling for removal of bottlenecks in acceleration of rural development, the author says that through a sample survey, mere chalking out credit plans and fixing up physical and financial targets would not suffice unless bank officials assigned such a gigantic task for the uplift of villages are more realistic and helpful in their approach to the small and marginal farmers. He wants them to work with an endeavour to free the farmers from the clutches of money-lenders. In fact, banks have still miles to go in fulfilling their objectives, he laments.

NATIONALISATION OF 14 major commercial banks in July 1969 marked the commencement of a new era which brought many innovative and imaginative schemes in its wake and gave a decisive push to the banking industry to move in a desired direction. Banks were then expected to play their part not merely as dealers in money but more realistically as the leaders in development. They were assigned a new challenging role in financing the priority sectors like agriculture, small scale sectors and small business enterprises including transport operator, retail traders, small businessmen, etc. The whole agriculture sector, which had been left neglected by the Indian banking industry, were to receive the top priority in the new scheme of things.

Expectations belied !

The pertinent questions today after 15 years of bank nationalisation are : Have the banks come upto expectations ? Have they proved worthy of the faith and reliance bestowed upon them ? An attempt here has been made to examine how and what the bank beneficiaries think about the dealing bank. We have taken up the case of one of the target-groups in the agricultural sector—the small and marginal farmers

The majority of the small and marginal farmers in our country are have-nots leading a miserable life in the clutches of vicious circle of poverty arising out of low production with consequential low income, low savings and low investment resulting again in low production. The old proverbial state of affairs "a farmer born in debt, lives in debt and dies in debt bequeathing debts" still holds the stage in the countryside. The small farmers still have to depend on the 'Shylock-Mahajans' for meeting their consumption and production demand for credit as they have very little surplus to invest on costly inputs required by modern agriculture. The per capita availability of land decreasing gradually, our farmers have to concentrate on intensive method of cultivation which requires more and more capital. Availability of credit in adequate amount at appropriate time is now one of the vital prerequisites for sustaining and fostering the technological change in agriculture.

Before the nationalisation of banks and their coming directly in the field of agriculture financing, the co-operatives were the only institutional agency to serve the capital needs of the small farmers. But more important role in the countryside was played by the private money-lenders who not only provided credit to the needy farmers but also exploited them most in many ways. Their 'help in need' always proved to be as injecting sweet slow poison to the poverty-striken farmers.

Changing rural credit scene

Much water has flown down the Ganges and we now witness a remarkable change in the field of agriculture financing. The nationalisation of banks have

proved to be a pace-setter and the institutional agencies like the co-operatives, commercial banks and the Regional Rural Banks are fast replacing the old 'hawks' of the rural credit scene. The commercial banks are coming to the rescue of the small farmers vis-a-vis their rural branch expansion programmes and taking up technically feasible and economically viable schemes of rural development. The share of commercial banks' credit contribution to the agriculture sector is increasing gradually and steadfastly. The flow of the credit to the agriculture sector increased from Rs. 15.9 crore as at the end of 1951 to Rs. 1334.88 crore at the end of December, 1976 and to Rs. 5,400 crore by the end of September, 1983.

The institutional break-up of direct finance to agricultural sector also reveals that commercial banks stand only next to the old institutions of co-operatives. Of the total outstanding direct finances to agriculture, which stood at Rs. 2028.7 crore by June 1977, commercial banks accounted for Rs. 565 crore, i.e., 28 per cent, a much more improved position than in 1971 when their shares in the institutional finances to agricultural were only about 7.5 per cent.

Dissatisfaction among farmers

Despite the increasing quantum of credit to agriculture sector being supplied by them, the commercial banks are not coming upto the expectations and the poor small farmers have still the feeling of being neglected in the bank premises. The farmers have gathered a feeling of distrust and dissatisfaction. They do not feel at home with commercial banks.

The present study was undertaken in the year 1983-84 during one of the 10-day National Service Scheme special camps in the village Sulindabad of Saharsa Block of Saharsa district in Bihar. The purpose of the study was just to pinpoint the problems faced by the small and marginal farmers, going in for bank loans. Out of the total number of about 200 small and marginal farmers in the village, a random sample of 50 farmers was selected and their opinion gathered through survey method using schedules and questionnaires prepared specially for this study.

Altogether 10 bottlenecks were spelled out after going through some purposive conversations with the representatives of small farmers, village youths, bank officials and the farmers involved therein. The table below depicts the picture that emerged out :

TABLE I

Bottlenecks faced by the small farmers in getting Bank Loans

S. No.	Bottlenecks	No. of farmers	Percentage
1.	Procedure of bank-loan is cumbersome & long.	50	100
2.	Difficulties in getting loan application form	25	50
3.	VLW/Panchayat Sewaks do not help in completing official formalities	6	12
4.	Loans are not available on personal security	12	24
5.	Loans not available in time	45	90
6.	Amount of loan not adequate	15	30
7.	High rate of interest	38	76
8.	Period of repayment quite short	5	10
9.	Unaware of loaning programmes of the govt. & the banks.	46	92
10.	Bank offices not very helpful	27	54

Cumbersome procedure !

The most remarkable thing was that all the 50 sample farmers expressing their view separately opinioned that the procedures of bank loan were cumbersome and time-taking. Almost all expressed their inability in filling up the loan application form and submitting what the bankers consider "technically feasible and economically viable schemes". As many as 92 per cent of the sample farmers expressed their unawareness of the loaning programmes currently undertaken by the government and the banks. This definitely reflects the poor extension works on the part of officials concerned.

Failures of the banks!

Similarly, 90 percent of the farmers complained about the failures of banks in supplying credit to them at proper time. Almost 76 per cent spoke of a 'very high rate of interest' being charged. Again 54 percent of the sample farmers found the bank officials not co-operating well and 50 percent expressed difficulties faced by them in getting even the loan application form. About 30 per cent of the farmers appeared dissatisfied as they found loans not made available in time when these were badly needed. Similarly, 24 per cent had something to grudge as loans were not made available on personal security. The rest of the problems had no significant weightage to be of much consideration.

All the above bottlenecks prove to be exacting for the small farmers who, more often than not, are bound to think in favour of the village mahajans or moneylenders of the nearby town.

The sample farmers were also asked to give their suggestions for overcoming the above-mentioned bottlenecks. The following table is suggestive of their response :

TABLE II

Suggestions of farmers to overcome difficulties

Sl. No.	Suggestions	No. of farmers	Percentage
1.	Procedure of financing should be comprehensible and simple.	50	100
2.	Loans should be made available at right time	46	92
3.	Recovery of loans should be deferred in the event of crop-failures	50	100
4.	Rate of interest should be low	40	80
5.	Loan should be made available at the the village itself by organising loan disbursement camps	32	64
6.	Farmers should get all informtaion about the loaning programmes direct through govt. or bank agency	13	26
7.	Each village should have sale-centres for seeds, fertilizers, insecticides, etc.	43	86
8.	Block Officials should be more co-operative	31	62
9.	Farmers should get readymade list of viable schemes for taking loans	24	48
10.	Loans should be adequate suited to the schemes	37	74

Need for simplification of procedures

The Table is clear indicative of the fact that the farmers are very serious about the procedures of bank loan and almost all of our sample farmers suggested for a simplified procedure comprehensible to all. All of them wanted recovery of loans to be deferred in case of crop failures due to natural calamities like famine, flood, drought, etc. They expressed their deep urge for timely disbursement of loans and as many as 92% of the sample farmers suggested quick and timely availability of loans.

As they have to move from pillar to post in getting permit for the supply of fertilisers, seeds and insecticides on STC loans, they wanted sale-centres of each such vital inputs in their village itself. As many as 86% of the farmers put forward suggestions on these lines.

Similar was their serious concern about high rate of interest and as many as 80% of the farmers wanted a low rate of interest. While 74% suggested for sufficient amount of loans, about 64% wanted special camps organised for the disbursement of loans within village itself. Again, 62% of the respondents were critical of the role played by block officials and they wanted them to be more co-operative. As many as 48% of the farmers asked for ready made list of viable schemes so that they might be able to select one for adoption. About 26 per cent did not like the interference of any middlemen and they opted for direct guidelines from the government as well as bank officials.

Although, the above study is related to only one village of the district of Saharsa (Bihar), the results arrived at speak for the rest of the villages and reflect the concern of small and marginal farmers residing in every nook and corner of the countryside. It must be borne in mind that merely chalking out credit plans and fixing up physical and financial targets under the rural development programmes are not sufficient enough for the uplift of the masses in the village unless we go in for removing the real bottlenecks faced by the target groups. The bank officials assigned such a gigantic task of rural development are required to be more realistic and helpful in approach and practical in attitude. They have to work not only as an agent to free the farmers from the clutches of moneylenders but also to serve as harbinger of all-round rural development and prosperity. True, they have still miles to go and keep on going.

Viability of frozen food industry

A National Symposium on Quick Frozen Foods helds in New Delhi recently recommended that urgent steps should be taken for the development of frozen food industry in this country as it is done in developed countries. The symposium felt that it was an absolute necessity, because of the tropical climate of the country, where large part of food deteriorated and wasted for the non-availability of economically viable freezing technique in the area.

The Symposium was jointly organised by the Union Department of Food and the Delhi Chapter of the Association of Food Scientists and Technologists.

Referring to frozen meat and poultry products, the Symposium stressed the need for modernisation of slaughter houses so that wholesome meat was available for internal consumption and export. It also stressed the need for further development of the export trade of frozen marine products and diversification of product range.

The Symposium suggested stepping up of investment on frozen fruit and vegetables as hardly one per cent of the 60 million tonnes of vegetables produced in the country were being preserved. The preserved products were not generally acceptable because of high prices. Freezing could overcome this problem to some extent and offer almost fresh food if proper investment was made. Quick freezing was also the only answer to fresh food service in transit, specially during rail and air travel.

The Symposium felt the need for introducing frozen dough and frozen bakery products, for which good scope was available. Frozen dough could be made available to housewives for preparation of chapatis and bakery products of their own choice.

Why this rush towards cities!

K.S. Bawa &
G.S. Kainth

Migration from villages to cities is constantly increasing in Punjab. There has been fast growth of big cities and small towns have been converted into big cities. The only exception when this trend was halted was the period of green revolution of 1961-71. The author points out that it is high time that a national policy of urbanisation was adopted to ensure balanced growth of cities. Otherwise, he feels, unplanned increase of population in the cities could play havoc with whatever improvement the civic bodies have brought about.

HISTORICALLY, URBANIZATION HAS BEEN associated with the process of economic development. The city, with its concentration of industry, commerce and administration and of capital, labour and technology, has traditionally been a powerful generator of national economic growth. Urbanization has been termed as an inevitable consequence of development and essential condition for social and economic development.

The process of urbanization is irreversible. Despite all this, urbanisation is viewed with alarm, because increase in urban population may not be matched with necessary increases in the related infrastructure. Cities may become catalysts or caneers, aiding or hindering economic development. Urbanization may bring in its wake the problem of slums and squatters, pressure on public health services, transport and community facilities, calling for a well-conceived national policies for urban development.

Urbanization in Punjab is relatively on a clean slate if viewed from the point of view of more industrialised states of India and other advanced countries of the world. The percentage of urban population increased from 21.01 in 1951 to 27.72 in 1981. Growth of urban population was of higher rate during 1950's (29.00 per cent) which declined to 25.37 per cent during 1960's and again rose to 40.69 per cent during 1970's. Comparatively low rate of pace of urban population during 1961-71 was due to.

(i) The decade of 1961-71 was the era of 'Green Revolution' in Punjab resulting in the improved economic condition in the rural areas. Intensification of agriculture led to the absorption of a large number of work force because of relatively low mechanisation in initial stage. The percentage of agricultural labourers increased from 1 9 per cent in 1961 to 24.8 per cent in 1971. Wage increase of agricultural labourers was 46.66 per cent during 1966-67 to 1969-70; and in case of peak period this increase was 58.33 per cent. Contribution of primary sector in the net state domestic product also increased from 55 per cent in 1961 to 60 per cent in 1971

(ii) Improved road network and better accessibility in rural areas adversely affected the growth of urban population by rural-urban migration, i.e., by converting migration into commutation. At the end of this decade 2|3 of the total villages in the state had either a metalled roads or were in the proximity of 1.6 k.m. of a metalled road. The

percentage of village beyond 8 km. from metalled roads was only 1 per cent.

(iii) Dispersal of electric power and consequently the spread of economic activities in the rural areas has also checked the growth of urban population.

(iv) The impact of proximity to Pakistan border and Indo-Pak War of 1965 also created an environment of uncertainty in urban centres near the Pakistan border adversely affecting the urban growth. During this period the growth rate of urban centres in the border zone was 17.8 per cent against the 25.27 per cent of urban and 21.70 per cent of the total population in state.

Why higher growth in seventies?

On the other hand comparatively higher growth of urban population during 1971-81 was explainable in terms of better performance of urban economy, environment of certainty and confidence in urban centres particularly near Pakistan border; the completion of green revolution; investment of agricultural surpluses in urban areas and favourable industrial policy of the State.

The spatial analysis reveals that five districts, viz., Amritsar, Patiala, Jalandhar, Ludhiana and Ferozepur had higher proportion of urban population than the State average in 1951. In 1981 Ludhiana, Jalandhar, Amritsar and Patiala districts had higher proportion of urban population.

During the period 1951-81, while Ferozepur district moved to a position below State average, Kapurthala district moved to a position above the State average. In 1951, Amritsar district had the highest proportion of urban population (29.05 per cent) but in 1981, Ludhiana district ranked at number one position with 42.10 per cent of urban population. The districts of Hoshiarpur, Rupnagar, Bhatinda, Sangrur, Faridkot and Gurdaspur continued to have lower proportion of urban population during 1951-81, though Rupnagar improved significantly over this period

In terms of annual growth rate of urban population during 1951-61, Rupnagar ranked first with 10.38 per cent followed by Faridkot, Bhatinda and Ludhiana districts. During 1961-71, Ludhiana, Hoshiarpur, Kapurthala and Gurdaspur districts experienced higher rates of growth. The annual rates of growth of urban population during 1971-81 were relatively higher in Rupnagar, Bhatinda, Kapurthala, Ludhiana and Faridkot districts. For the entire period of study 1951-81, Rupnagar, Ludhiana, Bhatinda and Faridkot districts experienced higher rates of growth of urban population than the State average.

Comparison of urban population growth rates during pre-green revolution (1951-61), green revolution (1961-71) and post-green revolution (1971-81) periods showed interesting results. The growth rate of urban population during pre and post-green revolution period was much higher as compared to the green revolution period, indicating that green revolution halted the migration from rural to urban areas only for a short time. The trend has picked up in post-green revolution period. This finding has an important implication that green revolution is unable to check the trend towards rapid urbanization. on the other hand, it may encourage urbanization.

Growth of urban centres

Another important aspect of urbanization is distribution of urban population in different classes of towns. The ratio of population in cities with population of one lakh or more to total urban population (C|U) is used as another planning and policy point of view (C|U) is considered to be more important The growth of urban population during 1951-81 was not the same in all the six classes of urban centres Large urban centres experienced higher growth rates than the smaller ones during 1951 81

The growth of class I and class III towns in 1951-61 was higher than the average growth rate of urban population, i.e., 29.06 per cent. However, during this decade all the urban centres with the exception of class VI, registered higher growth rate than that registered by the rural population i.e., 19 47 per cent The exceptionally higher growth rate of class III urban centres can be explained by the fact that three new townships were established in this category by the Government, e g., Rajpura Township and Nangal group of towns to accommodate the refugees from Pakistan and necessary work force for Bhakhra Dam Malout town classified for the first time was also added to this class

In 1961-71. class I urban centres registered the highest growth rate. Other categories of towns with growth rate higher than the average were class I and class IV. There was increased industrial activity in these two classes during this period Moreover a new town of Talwara was added during this time to class-IV. Class-III towns where growth rate was highest during the previous decade, experienced a very low growth rate, i.e , 13.94 per cent in this period because the tempo of setting up or emergence of new towns like in 1951-61 was not there during the decade and secondly many cantonment and other service towns of this class lost net out-migration. In many class VI towns there was net outflow of people to other areas.

During 1971-81 in all the urban centres except class VI, population growth was higher than the average growth of total population. However, like in the previous decades class I and III towns registered comparatively higher growth rates that may be explained in terms of better infrastructure in class I cities and increased industrial activities in class III towns particularly the market towns. The overall performance (growth) of all the urban classes was

better during this decade than the previous ones. Comparatively higher and lower growth rates of larger and smaller urban centres during 1951-81 are mainly the outcome of (1) the presence of external economics resulting from the agglomeration of activities due to better location and other factors and resulting into cost-minimisation for entreprenuers (2) Availablity of qualitatively better facilities in larger urban centres and their absence in smaller urban centres. Thus, the most interesting feature of urbanization in Punjab is the fast growth of big cities. *Urbanization has led to rapid migration to* big cities and conversion of small towns into big cities. During 1951-81, maximum (29) and minimum (4) number of towns moved upwards belonged to class V and class II respectively. Towns that experienced two steps upward movements were Malout, Mandi Gobindgarh, Goraya, etc.

Problems of urbanization

If the past trends of urbanization in the State continue, then by A.D. 2001 massive investment will be required to cope with the increasing requirements of housing, sanitation and other problems of urbanization. In 1971, there was shortage of 1.9 lakh houses in the State which might have reached more than 4 lakhs by 1981. To the existing backlog requirement of another 6,57,000 houses may be added by 2001 to accommodate the urban population. Housing congestion has already become grim in the State, as the average number of persons per room increased from 2.53 in 1961 to 2.72 in 1970.

According to 1971 census 39.9 per cent households in the urban areas lived in rented houses in the State The living conditions in the urban areas cannot be termed as satisfactory According to 28th Round of National Sample Survey in 1973-74, only 80.63 per cent urban households in Punjab lived in pucca houses, 77.28 per cent urban houses lived in electrified houses, 32.23 per cent of the urban household had no latrine facilities in the houses and 58.75 per cent urban households in the State did not-have tap water supply in the State. No doubt, there might have significant improvement in provision of the basic facilities in the past decade. but the existence of sizeable backlog cannot be denied.

As a result of rapid urbanization, the supply of basic facilities must increase at a faster rate to keep pace with the urbanization. The increasing per-capita expenditure of the municipal committee and improvement trusts in the State increased from this respect. While the per capita expenditure by the improvement trusts in the state increased from Rs. 10.25 in 1970-71 to Rs. 23.55 in 1980-81, the per capita expenditure by the municipal committees| corporations increased much more rapidly from Rs. 15.13 in 1960-61 to Rs. 31.74 in 1970-71 and to Rs. 114.21 in 1980-81.

Ills of urbanization

Though the usual horrors of urbanization like pollution, over-crowding and crime are not so acute in the State, these may arise if the unplanned urbanization continued. Housing shortage has already become a serious problem. House rents increase much faster than house rent allowances. Net area under cultivation in the State being 83.27 per cent of the total area in 1980-81, the rapid horizontal expansion of the towns may reduce the area under cultivation. Thus this is high time to plan for the vertical expansion of towns in the State. Further, to avoid the menace of big cities policies should be formed for the establishment of new or satellite towns to act as counter magnets to the prevailing trend of the migration to big cities. The growth pole approach to regional planning is required in the State.

The unplanned rapid urbanization may make the unemployment problem more acute in the State. According to 32nd Round of National Sample Survey (1977-78) the unemployment in the urban areas of Punjab was 4.9 per cent in case of male population and 11.1 per cent in case of female population. Number of jobs seekers on the live registers of employment exchanges increased from 94,000 in December 1970 to 4,93,000 in March 1982, in the State indicating enormous increase in the army of the unemployed, a sizeable part of which may be urban unemployed. Therefore, the economy of the State needs reorientation towards industry. Experience has shown that green revolution has not been instrumental in checking the rural-urban migration. Therefore, policies should be framed for employment-intensive industrialisation of the State.

What States can do?

In the absence of national urbanization policy, the State may frame its own urbanization policy which may be based on the considerations of (a) dispersal of industries and decongestion of cities; (b) setting-up of new and satellite towns: (c) regional economic planning according to growth poles or focal points approach; (d) locating gaps in infrastructure and proper planning for future; (e) harmonisation between urbanization and other related aspects especially maintenance of ecological balance; and (f) ensuring uniform availability of infrastructural necessities like health, education, etc., in the rural areas, Thus a comprehensive urbanization policy is called for balanced urban growth. □

Balanced urbanisation, a must!

Dr. Radha Raman Singh

The author here says that the process of urbanisation, though essential to economic growth, must be within the limits of the national plan objectives and free from over-urbanisation. Small and medium towns should be developed around the rural settlements to help growth process of the rural sector. The increasing population of big cities without corresponding increase in productive employment apportunities poses a serious problem. The author, therefore, calls for formulation of a national polic of integrated urban and rural devlopment supported by adequate funds under the Seventh Plan.

IN THE PROCESS of the formulation of development strategies in India, though development of the rural sector has a prior claim, but, for balanced regional development and modernisation, urbanisation has a positive role to play. The major objectives of Indian planning since its very inception have been focussing on growth, employment, social justice, spatial co-ordination, quality of life, modernisation and self-reliance. Attempts have been made to integrate and link these objectives together but urban development strategy has not been implemented as a complementary component of rural development. Consequently it has not been possible to create a mutual and harmonious relationship between the rural and urban sectors.

In the developing economies where the primary sector is predominant, the chances for greater urbanisation and thereby modernisation are great. The objective of rural development can be achieved only by having an integrated rural-urban development planning strategy. Because planned urbanisation is a necessary component of the infractructure of economic development as towns provide, inter alia, a variety of centralised services for the surrounding rural areas such as marketing of agricultural surpluses and products of village and cottage industries and supply to rural areas a variety of goods and specialist skills in a wide variety of field required for rural development But by and large, no clearly focussed and consisely expressed national urban development goals and objectives have been formulated and urban development in India has taken place in an even more unbalanced form than rural development The gap between the rural urban integration is still very wide and mutual relation between rural and urban sectors have not been satisfactory. This is because the issue of integrated rural-urban development has either remained neglected or is under-emphasised in the planning and policy decisions of the country

Role of Urban Centres

Urbanisation has a positive role to play in national development. In the developing countries, urbanisation should be a complementary component of the national development goals because it may not, in any way, absorb the influx of rural migrants to the metropolitan centres due to considerably less creation of employment opportunities either in industries or otherwise. In countries like India, where the rural sector is the core of the national economy, urbanisation may play a complementary role in developing this sector of the economy. But urbanisation process must be within the limits of the national plan objectives and strategies and free from over-urbanisation and dangers of variation within the urbanisation process This can be ensured by developing the small and medium towns around the rural settlements which would play the role of growth of service centres for developing the rural areas.

The national development plans of most of the developing countries do not contain clearly defined objectives and targets for urbanisation. Urbanisation is

discussed only in terms of industrial location and in terms of the problems associated with housing or slums, provision of amenities in cities or for preparation of 'master plans' for the cities over a certain size. In these nations, rural to urban migration is by far the major component of urbanisation and India is no exception to this which is evident from the growth of population of the major cities during the previous three decades.

In fact, the big cities of India are 'migrant cities' in the sense that majority of their inhabitants are migrants. But now emphasis is being laid on such a strategy of urbanisation which can be helpful in creating 'urbanism' as a way of life by developing small and medium urban areas because 'urbanism' is an important change agent together with technology and social system for the process of urbanisaation which in turn leads to modernisation. In less developed economies where dualistic pattern of development is the reality in which the traditional sector and a small modern sector develop with coexistence, urbanism and ruralism get mixed up and have a new dimension in the shape of 'urbanism' in which rural and urban development are complementary to each other and thus, national development rests in the integrated development of both the counterparts. Thus to condemn urbanisation as an evil and warn people to keep out of cities is a cry in wilderness. It is our contention that the process of urbanisation is not only desirable but essential also for economic growth, but it should be so planned that it avoids over-urbanisation and encourages the development of small urban centres in the shape of growth or service centres for modernising and reconstructing the rural outlook.

Ever increasing urban population

Taking into view the above hypothesis of urbanisation and its role in rural reconstruction, when we look at the process of urbanisation and its existing position in India, the picture that emerges does not fulfil the tests of the required hypothesis. The growth of urban population in India has been much higher than the average rate of total population growth during the first 80 years of the twentieth century and according to the population projections, the trend is likely to continue up to the end of the century. Urban population increased more than three-fold during the period of the first six decades being 78.8 millions in 1961 in comparison to 25.7 millions in 1901 and again during the two decades covering 1961—1981 it has doubled being 159.7 millions in 1981. At the beginning of the century, urban population accounted for 10.9 per cent of the total population which increased to 19.9 per cent in 1971, to 23.3 per cent in 1981 and is expected to become 32.2 per cent in A.D. 2000. When we look at the distribution of the urban population between different size classes of towns along with the inter-censual growth, it becomes evident that large towns have grown faster than smaller ones. The proportion of urban population in cities of over one lakh population increased from 38.1 per cent in 1951 to cover 60 per cent in 1981 whereas the proportion of urban population in small towns of less than 10,000 population declined from 13.6 per cent in 1951 to 3.6 per cent in 1981 and of less than 5,000 population from 3.4 per cent to 0.5 per cent during the same period. Cities of over five lakh population increased from 26 per cent of the total urban population in 1960 to 39 per cent in 1980 and number of cities under this category increased during the same period from 11 to 36. (World Bank, World Development Report, 1982). This trend shows unbalanced urbanisation and heavy exodus of population at the metropolitan urban centres which is clear indication of unhealthy process of unbanisation in India which is against the proposed hypothesis of the development of small scale and medium urban centres in the country. There is a high co-relation between urbanisation and development level. Nearly all developed countries have urban population above 50 per cent being 91 per cent in UK, 78 per cent in Japan, 65 per cent in USSR, 73 per cent in USA and 78 per cent in France. Urban growth rate in these countries appears to be getting stabilised. But in a developing country like India urban development should be sound and healthy and small towns should develop at faster rate which may help in the development process of the rural sector which is the core sector of the economy.

Unbalanced urban growth

The unbalanced trend of urban development in India becomes more clear when we look at the interregional variations as well as intra-regional differences. Within this overall pattern, it is important to distinguish problems as they occur between different regions and different cities. For example, excluding West Bengal, which had 26.49 per cent urban population of the total in 1981, the whole eastern region had far less urbanisation in comparison to 23.70 per cent urban population of the country's average being 10.28 per cent in Assam, 12.46 per cent in Bihar and 11.82 per cent in Orissa, whereas Gujarat (31.08%), Maharashtra (35.03%), Haryana (31.96%) and Tamil Nadu (32.98%) have even more urban population than the national average. Hence, while in the backward states, the problems of urbanisation are caused by stagnation, those in the more advanced states, the problems are caused by relatively high growth. The national urbanisation policy should involve specific consideration of regional problems and urban development should be seen in the light of its specific functions within the overall settlement framework.

Another aspect of urban development in India is that it has grown at a much faster rate than the provision of the infrastructure mainly because of the low living standards of a large proportion of the rural population who migrate to the metropolitan centres in search of employment. During the decades 1971-

1981, while the overall population grew by 23.2 per cent, the urban population grew by 50 per cent. The most disquieting feature of the urbanisation process has been significantly larger rate of growth of the large and metropolitan urban centres mainly due to large scale migration of the rural population to these urban centres. The pressure of migrant population is less in small towns and that is even less than the average migrant urban population.

As an effect of large scale migration from rural to the urban centres and inadequate availability of employment opportunities, there has been significant increase in the estimated number of unemployed and under-employed in the urban areas. Ashis Bose has also pointed out that "a large turnover migration is a symptom of slow economic growth under conditions of rapid population growth. The lack of adequate employment opportunities both in rural and urban areas generates involuntary mobility resulting in turnover migration". (India's Urbanisation 1901-2000, 1978, p. 4). The effect of the failure to deal with the growing urban unemployment has resulted in increasing number of population below poverty line living in urban areas.

In this way, it is apparent that urban development has not certainly integrated with growth the other components of development such as employment and social justice including the orderly growth of urban areas by population size and the creation of continuance among them. Thus, the development of urban areas in India has been in unbalanced manner and the growing number of population in big cities without any corresponding increase in productive employment opportunities poses a serious problem before the government, planners and administrators

There has not been integration of rural and urban areas in the development process and in spite of more than three decades of planning, the gap between the town and the countryside is still very wide. Taking into account the Indian conditions, the need in this circumstance is to establish healthy and mutual rural-urban relationship by maintaining a high priority to the rural sector and a balance has to be found between the tiny and the gigantic in the rural-urban settlement pattern with all their accompanying attributes which may be helpful development of the rural and urban both the sectors on the basis of mutual dependence and complementary relations.

Development during Plans

When we concentrate our attention on the provisions of the various Five Year Plans of India with regard to urban development and the rural-urban relations, it appears that due to predominance of the rural sector in the Indian economy, the planners and decision-makers have not given sufficient thought to the spatial consequences of economic decisions which are necessary for balanced regional development and as a result the urban sector could not have a defined objectives and place as an essential component of national development strategy. In the first two Plans of India, inadequate attention was given to the problem of spatial planning and urban development and only sporadic references are found in respect of rural-urban relations. The Third Five Year Plan, after realising the problem of regional imbalances made an attempt to throw light on housing and urban and rural planning. But upto the Third Five Year Plan, urbanisation was discussed as a matter of industrial location policy and town planning dominated by housing needs and very little attention was paid to the economies of urban development.

The Fourth Five Year Plan referred at length to the need for redressing inter-state and intra-state imbalances in development which included by implication the rural-urban problems as well. The plan pointed out that "A beginning must be made by tackling the problem of larger cities and taking positive steps for dispersal through suitable creation of smaller centres in the rest of the areas". A working group appointed on urban development suggested area-wise studies that would help in building up a region-wise physical development pattern that would include both rural and urban areas. The Fourth Plan had a provision of Rs. 188 crore in the States sector for urban development, housing and metropolitan schemes and Rs. 10 crore in the Central plan as a share capital for the establishment of a Housing and Urban Development Finance Corporation But the amount was too negligible to meat the ends.

Since the Fifth Five Year Plan, the Government as well as the Planning Commission has been stressing the need of slowing down the rate of urban growth at the metropolitan level and check up the accelerated exodus from the rural areas to the urban areas and augmenting the pace of urbanisation at the level of small and medium centres. The Draft Five Year Plan 1978—1983 accepted planned urbanisation as a necessary component of the infrastructure of economic development and put the thrust of the urbanisation policy on slowing down and if possible, reversing the rate of growth of the metropolitan cities and increasing the rate of the growth of the small and medium towns. This Plan report also contained specific awareness of the need for integrating rural and urban development for the first time in Plan documentation. For giving greater emphasis to the provision of infrastructural and other facilities to the small towns and to equip them to act as growth and service centres for the rural hinterland, it proposed increased investments which included the items like housing, water supply, communication facilities and others. Along with it, the Plan proposed and allocated funds for improving the living conditions of the urban poor of larger cities and raising civic services upto acceptable levels. The Plan had proposed for an outlay of Rs. 752 crore under Urban Development Programmes as against Rs. 505.46 crore in the Fifth Plan on various items like Environmental Development and

Slums, Urban Development Programmes, Integrated Development of Small and Medium Towns, Integrated Urban Development, etc.

The Sixth Five Year Plan 1980—85 also approved the policy of integration in rural-urban development and accepted the notion of balanced approach as an essential aspect for "ensuring an orderly process of urbanisation along with the overall development of the country".[1] The Plan envisaged an outlay of Rs. 977.53 crore for urban development and along with the policy of expansion of the amenities to the urban centres, it emphasised the need of research and development in order to improve the policy formulation for accelerating the pace of growth of small towns, making the rural-urban relations mutual by linking them with one another and strengthening the local bodies so that they can play a greater role in financing and implementation of urban services.

Thus, attempt has been made to integrate the urban development into the Plan particularly since the Fourth Plan but financial resources allocated are so inadequate that the implementation of the urbanisation policies remains in fiasco The lack of the approach to narrow the gap between the rural-urban links also hinders the path of achievements of the Plan proposals. Though, to some extent, urban development has been considered in terms of its integration with the development of the rural sector, but in practice, it has been dominated by housing needs, provisions of amenities in the urban centres etc. and little attention has been concentrated on economics of urban development and spatial consequences of economic decisions and co-ordination of economic planning with the urban-rural spatial planning

Conclusion

The above analysis reveals the fact that in spite of planned development efforts made in India, urban development strategy has neither been able to provide a good living condition to the millions of urban poor who are mostly the migrants from the rural areas, nor to lay the foundation for the national policy of integrated rural and urban development. Urbanisation is key to modernisation and in its true perspective, urbanisation is relevant in solving the rural problems.

In Indian conditions, small scale urbanisation is the only solution for achieving the overall objectives of the national plan. It is probably the one concept which can mobilise rural savings for rural reconstruction and to provide employment-opportunities to the rural people that will check the exodus of rural migrants in the urban centre and thus will solve the major urban problems too. In this connection the 'Cluster approach' of Dr. V.K.R.V. Rao is appreciable. As decentralised development is the key for the betterment of rural-urban relations, local bodies like panchayat system may prove an efficient tool provided it is used as an effective instrument for participatory democracy at the grass-roots level. For improving the living conditions of the urban centres, provision of employment opportunities is the basic need and that can be improved only by checking the inflow of rural population to the urban centres by providing them employment nearer to their homes. This can be done by developing the small towns and shaping them like growth centres which can be helpful in creating "urbanism" in the rural way of life and work.

The key to integrated rural and urban development is transport, communication, information and provision of other infrastructure along with participatory democracy and, therefore, there should be universalisation on a minimum basis of the social, economic and cultural infrastructure needed for development and improvement in the quality of life. This can be done by linking the rural sector with the flow of urbanisation and in policy matters, urban development should be discussed in the light of economies of urbanisation which is helpful in making urbanisation an important tool for national development. The Seventh Plan should formulate a national policy for integrated rural and urban development supported by adequate funds, which is intended for achieving the national goal of balanced regional development with social justice.

Help for the handicapped

WORTH is the short form for the name "Workshop for the Handicapped". It is a workshop-cum-farm in Thiruchirapalli, Tamil Nadu.

Handicapped people are trained to get gainful employment there. Most of the people being trained are handicapped, including cured lepers whom the disease has maimed. Gardening, sheep rearing, dairy, poultry, rabbit rearing and other professions are taught here. The training lasts six months and after its successful conclusion, a trainee can get a job elsewhere or start on his own with a loan of upto Rs. 5,000 under the Integrated Rural Development Programme (IRDP). Those who do not venture for either get absorbed in WORTH itself.

There was a time when people believed that it was God alone who could help the lame to climb mountains and the dumb to become orators. Today, proper training, hard work and financial assistance are doing to the maimed and the handicapped what God alone could have done earlier.

What lacks in science education ?

Pradeep Raje

Calling for the need to reform science education in India, the author laments that "precious resources have come to naught because the scheme of science has gone against the grain of the nature of science." He makes a strong plea for non-formal science education on the pattern of an experiment carried out in Hoshangabad, Madhya Pradesh. What the experiment was is described in detail below.

SCIENCE IN INDIA stands in sharp contrast to the lofty ideals that the founding fathers of Indian science had set. The buck stops right at science education which at present leaves much to be desired. Still there is hope provided we put our house in order. The need for reform assumes urgent proportions because of the intrinsic nature of science, the magnitude of wasted time and efforts and the demands of the future decades.

Precious resources have come to naught because the scheme of science education has gone against the grain of the nature of science. Any attempt at reform must begin at understanding this concept.

The nature of science

Science is multifaceted knowledge. It is non-reflective in character, that is to say, the result cannot be foretold in advance yet it is empirical. At the earlier stages it is more abstract than exact but later it is very exact. In this process it follows from the cognitive to the operational. And finally it stands in probation, being capable to disproof by experiments and observations (i e. the hardware of science). It will be useful to differentiate between the hardware and the software of science because lack of hardware has often been quoted to be the only constraint but we stress that the deficiency in software has been the bane of Indian science.

While the hardware, i.e, the equipment and experiments, keeps growing from one level of sophistication to the next, the software follows a fixed pattern of a thesis, an anti-thesis and finally a synthesis which leads back to another thesis. Observations have a significance only when they are woven into a theory which leads to further questions and enquiry The hardware of science gives to science its empirical nature, i.e., the hypothesis is capable of being tested accurately not once but a million times with the same result. A hypothesis, on the other hand, is a vision in the abstract. Hardware then either approves it for the time being till such experiments are evolved as may disprove it or provide an anti-thesis.

The non-reflective character of science is central to this discussion. Viewed in its entirety, science is an activity that progresses not by reflecting on it but by pursuing it.

The nature of scientific activity

The nature of scientific activity is not to deify but to secularise man. The extent of God's domain is being regularly trespassed upon to claim for man the prerogative that was once God's alone. The myth of Prometheus, who stole fire, the first technological invention from the Gods, was the first attempt to deny and transgress God's limits. The pitch continues and the moon too has fallen to the creative urge of technology and the desire of man to make the earth more livable, a kind of secularization that was promised in the scriptures to be in Heaven (or Hell) alone.

The Indian panorama

This idea which has the driving force of contemporary science is woefully diluted to extinction in the Indian context. Here the central theme of philosophy had been Dharma and Karma, both being attempts to transfer the action-reaction equilibria from the active to the passive, i.e., into God's domain. This philosophy has been the backbone of the characteristic, fatalistic attitude of the Indians. It is interesting to note that the concept percolates down from the older generation to the younger one but once the grain of this sand enters the young mind, it grows in the form of an inverse pyramid and at such time that these young ones are in positions of authority like educationists, administrators and planners etc., they are in position of doing maximum harm. Biological determinism still holds out against the harijan, even today is just one glaring example of this vicious circle. This circle can only be broken at one stage—in young minds—if they are given a thorough grounding in scientific thinking. Apparently, the role of a teacher, who is charged with the responsibility of socialising the new entrants with the values and more prevalent in a society, becomes central to the issue.

Indian teachers have failed signally to transfer the rich heritage of Indian science. Science, as it is taught today is just another subject comparable in weightage to the humanities but requiring much more labour because as we said there is no contextu continuity in science as there is in the humanities. While one king must have the son of another king and since the dynasty is known to be good, he must have been good there is no such line of thinking in science where the reaction at one temperature varies widely from a reaction at another temperature.

Indian students pursue science not as an activity but as a subject, the text of which is a finished product and not a process, and that too, with great vigour. Society attaches a great deal of prestige to the students in the science stream, which leads to greater competition. The severe elimination process then gives the successful candidate more prestige which in turn leads him to pursue the subject with greater vigour. And that essentially is the triangle around which Indian science is moving.

Lack of resources is an unavoidable constraint but the major fault lies in the communicational aspects of science teaching. What is being taught today is a rigid set of facts, formulae and results. The student then treads on a well trodden path instead of being invited to participate in process of systematic exploration, to place himself where the scientist would have been at that time, for he is in no less inferior position than the scientist of that time, to explore the various branches of the tree and to come to a conclusion. Vigorous thinking would lead to the same results and in fact it would be better if he came to different ones. The result is immaterial but what is relevant is that he participated on the abstract plane and exercised his brain by thinking critically, rejected some branches and accepted some.

Hoshangabad experiment !

This philosophy has been put to test by the Kishore Bharati group at Hoshangabad in MP. This activity based, enquiry approach to science teaching was pursued relentlessly for the past 13 years and, that, 300 middle schools in and around Hoshangabad have adopted this pattern is only a simple indicator of the success of this programme.

A 3-year science curriculum, suited to the local environment was created and a kit of experiments was devised. The flavour of the method is brought out in the following example. It appeared that students hurt butterflies because they believed that the butterflies sucked away the goodness of the flowers and the flowers died without yielding fruit. Rather than give them a lecture on pollination and fertilisation, the students were asked to devise an activity to test the hypotheses. Budding flowers were enclosed in polythene bags so that air and sunlight were available but butterflies were barred. After the flowers bloomed and wilted the students found that the flowers visited by butterflies were the only ones to yield fruit!. They were convinced themselves and were in a position to convince others that butterflies far from preventing the formation of fruit had an important role to play.

This group noted that the students had difficulty when qualitative explanations were replaced by quantitative measurements. The students had difficulty in comprehending the written instructions and in making sense of diagrams. This was probably due to the fact that their dialects varied considerably from the simple Hindi used in the work-books. In view of these difficulties and the fact that they were all first generation learners with no help from home, the only channel of communications is the verbal one, i.e., through the teacher. The importance of the teacher, mentioned earlier is, forcefully brought out in the following observation by an active worker of the group, which although concentrates on the village set-up is equally true everywhere : 'The weakest link in communicating science through formal education is the teacher, not only because he is often ill-trained, lacks confidence and is deeply enmeshed in the feudal framework of the village society where innovation is tabboo, but primarily because he is isolated—physically and mentally from new thoughts. Till such time as effective social, economic, political steps can be taken to remove this isolation on a continuing basis on effort at communicating science has any chance".

Humanising science !

Our ideal, of teaching science is not only to get a few precious research findings but to equip each per-

son to think rationally, to break the shackles that an age old tradition have unconsciously bound us with and to see the strength of the nation reflected in each and every household. Chasing these ideals may as well be chasing a mirage, because, as it is, the essence of the interfacing between science and society is lost. The need is for humanising science, to make people realise that society and its values at all times was but the product of the development of science and its by products-technology, and that science operates all around them and is the single biggest source of social change and is the only key to secularisation.

Within the present bureaucratic set up, which decides the curricula, school textbooks and the examination system are also responsible. Vested interests operate at both fronts to operate a system that brings maximum economic return to them. Thus standard testbooks are edged out by including in the syllabus some topics not covered in the book and a locally produced book follows. Not that the standard books are any better. Open a book and you will find no relation between one chapter and the next—as if science was developed in spursts and bursts. The book is not developed on the same pattern as science was developed—the essential philosophy is lost and without the soul, the body is only a few pages of script with some fancy diagrams to be reproduced by rote.

Examination reforms needed !

It is essential that there be some serious rethinking on the examination system. It is suggested that exams upto class 8 be abolished and that the only constraint on the student be the mutual competition and only then will it be possible for each student to work at his own pace, yet, knowing that he must quicken it. The mad rush will only stop if reward system is abolished.

The importance of teaching science lies in its empirical nature and objectivity, for not many students may be expected to be as whimsical as Aurangzeb or come up with a brilliant solution to brute force-Satyagraha. Social consciousness has always been a constraint but presently everyone is acquainted with the exploits of science and is willing to let the younger generation venture even if they hold a rigid stance against it. The climate is ripe for renaissance and all that is required is a radical rethinking on the whole set up.

Role of the mass media

The role of the mass-media as a prime vehicle of social change need not be reiterated here but it is necessary that in all aspects the value of science and technology be stressed. An excellent example of bringing 'hi-tech' into each house was the recent election analysis on TV. It was indeed a good public relations campaign to introduce the power of the computer. Inquisitiveness is touching a new high in nearly all fields, as I found during the recent "open house" exhibition arranged at IIT Kanpur as part of its Silver Jubilee celebrations. People of all ages stood in queues for even as long as a couple of hours to see a computer work or see a Laser hologram amongst other things. Simply because they participated in this activity, the immense scope of recording three-dimensional information on a hologram was etched onto their brains forever. We hope that at least 25 per cent of the students will read the chapters on Lasers with greater interest and at least some of them will work on Lasers. Nearly everyone lapped with great interest the working and economics of a solar-cooker. With this demonstration went home the ideas of energy conservation, reduction of pollution and preservation of food value.

Nonformal science education !

Such non-formal science education, as that of the Kishore-Bharati group on Hoshangabad have shown, has much more significance as it operates at two levels. A consciousness is created in the older generation and an inquisitiveness in the younger one. It is suggested that all universities and colleges open their houses at regular intervals and show people patiently around. Where such facilities are not available, prerecorded video casettee (now they are so easily available) be shown. It is suggested that maximum use be made of our excellent national network of TV. A few good productions—both technically and contentwise—be shown regularly. To encourage feedback of the audience, well written and illustrated posters and handouts, complete with references be offered upon receipt of a letter stating the persons age, educational qualifications and his comments on the programme. The essential point is not to philosophise or issue a terse statement—do this and not this bit to let the message sink sub consciously. What we do must not go against essential human psychology for it hurts a grown up to be told what to do and what not to do and that too, by a young man.

The innovation overdue !

The recent introduction of CLASS (Computer Literacy and Studies in Schools) is a welcome though long overdue innovation on the school scene. The essence of this programme is that a student learns to think rationally at his own pace through instructive demonstrations on the screen. However its utility must not be overstressed because it is after all a costly alternative to the natural thinking process. It seems that here too the basic rationale is lost and schools are adopting it more as a status—symbol than a teaching aid. Have you ever noticed children from the not-so-well-to-do families play ? A child will be tugging at a matchbox attached to a string assuming that it is a railway train complete with an engine and a sharp whistle, where as a rich man's son needs elaborate setup, the more degrees of freedom the better it is !

(Continued on page 28)

To 21st Century with science and technology !

P.N. Srivastava

If we are sincere in our desire to take our country to the 21st century with a proper place of respect, we will have to give a better and central place to education and not a poor, neglected, peripheral place says the author. This requires a careful and earnest endeavour to give seriousness that educational reforms deserves today in order to provide a solid base for trained manpower in science and technology needed at all levels to save India from tomorrow's disaster. The author feels unless the quality of the base is good and large, we cannot expect world matching excellence at the tip of the pyramid.

IT IS FORTUNATE for our country that we had Jawaharlal Nehru as our first Prime Minister. He had a scientific bent of mind and a scientific temper in the real sense. He was very clear in his mind that the country's economic and social development depends directly on the application of science and technology. No wonder today we have the third largest scientific and technological manpower in the world and are among the top few industrialised countries of the world based on our performance and capabilities And this is in spite of the fact that the number of scientists and technologists per thousand of the population is very much less than the developed countries and their quality also may not be as good. However, they have the capability to do most sophisticated things, let it be atomic energy or space, or agriculture. It is only because of this that we have become self-sufficient in many areas. The food production has increased from 40 million tonnes to over 150 million tonnes; the life span has increased from 35-36 years to 57-58 years. The same is true for the production of steel and energy.

Nehru's scientific vision for India

It was only Nehru's foresight that he developed a large number of National Laboratories immediately after independence. He emphasised many things in science and wanted that politicians and scientists should work in close cooperation; it was extremely necessary to check quackery and superstition which could be done only through the development of science. He wanted the scientists too to be not merely scientists but human being as well and that is how scientists would be able to rid the country of its poverty and ignorance. He wanted scientists to develop their scientific temper essentially towards tolerance and humanity. He wanted scientists to be honoured and not considered some kind of camp followers.

Nehru's scientific vision led to the Scientific Policy Resolution of 1958 which is an extremely fine document acclaimed throughout the world. Because of its clearcut objective and necessary support our scientific and technological community has been able to give a strong agricultural and industrial base which ultimately culminated into the official Techonology Policy document which Mrs. Indira Gandhi announced in 1983.

These developments took place not only after we got independence in 1947 Years earlier, in 1939, the

Indian National Congress, whose centenary celebrations were initiated only some days back, appointed a National Planning Committee under the Chairmanship of Jawaharlal Nehru who invited the then leading scientists to participate in the formulation of plans for economic development and social betterment. He was of the view that an administrator was necessary, may be even essential but you can easily find another but you could not do without first class engineers and scientists. The scientific foundations laid down by Jawaharlal Nehru were continued by Mrs. Indira Gandhi as well and, soon after taking over as the Prime Minister of the country, she had said in the Convocation address at the University of Roorkee on 18th November 1967, "that without the help of science, I see little hope of checking the virus of religious hatred." This struck me gravely because of the situation prevailing in the country today.

Challenges of the future !

It is tragic for India, which is also true for other third world countries, that even before we could cope up with the first industrial revolution of the 19th Century variety, we were forced with the challenges of the second, i.e. chemical, and now the third one, i.e microchip technology and soon the fourth i.e. biotechnology of the 21st century. The task has become very difficult because there has been a tremendous shortening of the time between the development of an idea and its useful application. The time lag between the development of the principles underlying the combustion engine and their application in automobiles was relatively long and the life of the industry thus spawned has also been relatively long. But the period required for the advancement of electronic computing from an idea into a major industry has been only a few decades. Scientific principles and ideas are now moving to useful applications in only a few years and to product manufacture in only a few years more. It was only 12 years back that Stanley Cohen and Herbert Boyer, the Californian scientists, discovered restriction enzymes to cut the DNA and DNA ligase to join them in 1973 and we already have produced industrially Humulin (to replace insulin) and Human Growth Factor, Interferons, monoclonal antibodies in the market for a few years now. At the moment, the biotechnology is being presented as a potential cornucopia and the individual countries must provide backing to compete and to stay competitive. The possibilities which will be practical within a few decades in the areas of health and medicine; food and agriculture ; energy, raw materials, chemicals and environmental management are unlimited.

Entry of high technology !

During the last five years, the entry of computer into the ordinary house in developed countries has sustained one of the fastest-growing consumer markets. Their use again is limitless They replace the telephone directory, give political and sports news, etc. You ask for anything and the computer will provide the data. All these applications arise from extremely low cost of microprocessors-electronic circuits, providing, in a tiny volume, the basic logical functions of a computer. The processing power of these components is constantly being increased, while at the same time their size and cost plummet.

With the spread of the 'chip' consumer products are being transformed. Chips in electronic domestic equipment (the radio tuner, the television and its remote control) and equipment which remains fundamentally mechanised or electromechanical (the washing machine, the refrigerator, the toaster, the car), add a whole series of additional functions and automatic programmes. The aim is to spare us any residual effort required to use these appliances. Such devices 'know what we want to do' and can follow the steps of a process correctly, forgetting nothing, and mastering sequences of actions which, for us, would be time-consuming and would need our full attention

'Electronic mail' is being promoted these days as a widespread means of communication. It is said to do away with the major drawbacks of the telephone while introducing a wide range of novel functions. When I am talking about telephone, it is the efficient telephone system of the developed world and not that of ours where it may be easier to communicate by other means than using the telephones.

The use of electronic mail is as simple as that of a telephone. The user has a terminal connected with a central computer by a telephone link. The terminal consists of a screen and a typewriter-style keyboard From the keyboard, one can gain access to a service by typing a code name. You can send messages, receive message addressed to you and if your terminal has a printer, you can also ask for a "hard copy" of the messages on paper.

The science and technology in use now and being developed are shaping the choices which affect all our futures. We cannot do without technology whether it is agriculture for producing more food for our ever growing population or for keeping the population under control by suitable methods; using biotechnology for replenishing our resuorces or in developing various vaccines and medicines, new plant varieties, biological pest control; microchips technology which may change the pattern of working and thinking. Still, a proper choice for its development will have to be made by knowing enough to discriminate between a range of possibilities to determine our priorities. The technologies become costly and expensive once they are advanced and hence we will have to develop means in getting to know about them as early in the development process as possible. Strategies will have to be developed like the way Japan did after the Second World War so that we do not repeat what has already been done elsewhere and thus retain the gap

with the developing countries or even increase it if we are not careful and earnest about it. For all this a trained manpower in science and technology will be needed at all levels and unless the quality at the base is good and large, we cannot expect world-matching excellence at the tip of the pyramid. It is here that education comes in, and the situation at the moment is rather bleak. I hope to be excused to sound pessimistic which I am not but this also is true that if we do not give the seriousness that it deserves today, our tomorrow will be in disaster.

Education, the only way !

There is no denying the fact that if in this fast developing technological world we have to compete and remain competitive. greater emphasis will have to be given to education. The first sentence of the National Policy document drawn in 1968 after the Kothari Commission report says "Education has always been accorded an honoured place in Indian society". May I ask has it really been done ? It might have been done in bygone days but certainly not in contemporary India. And, we are paying a very heavy price for this. Whatever has happened and is happening in Assam, Punjab, Gujarat and elsewhere is indirectly because of the neglect of education.

It is true that at the time of Independence the country had 18 universities and 700 colleges with a total enrolment of 250,000 students and now we have 140 universities, more than 5000 colleges with a total enrolment of 3.5 million. It is also true that we had 16 per cent literacy when we got our Independence and today we have 35 per cent literacy meaning thereby that in between we have educated a population equivalent to the whole population of North America. This is not a small job done. It is also true that India has emerged as the third largest scientific and technological manpower in the world. A comparison with the countries on the top of the G.N P. ladder would show that the output of University science graduates in India is exceeded only by the USA and the USSR. At the post-graduate level, India with over 100,000 second degree holders, has an output more than eight times of Japan, West Germany, France, Italy or Canada. While making such statements we behave like the proverbial ostrich who digs its head in sand in times of danger and forgets the world around it. We conveniently forget the size of our population which is more than 700 million. Statistics can be put forward in different ways and one may choose the method deciding what one wishes to emphasize. The same data given above will give a dismal picture if it is put in terms of thousands of population. It will then come to that the number of science and technology personel per thousand comes to only 3 in India, compared to 15 in USA, about 90 in USSR and over 180 in Japan. And further, if it is taken in terms of effectiveness (which necessarily includes quality and capacity) then it comes to 0 1 per thousand in India, 3 in USA, 5 in USSR and 10 in Japan. This clearly shows the truth where we stand in comparison with the other nations of the world.

All the same there is no need to be extremely pessimistic and despondent. The talent, capacity and capability to deliver the goods are there and our leadership has to take the best out of it. India has built a capability and infrastructure covering a wide spectrum of science and technology starting from agriculture to atomic energy.

Tackling education !

The problem has to be faced and tackled from two angles—one from within the educational system and the other from the financial support from the Government.

I am happy that the Government feels concerned about education now. Education is beset with tremendous problems of deficient facilities, of low quality and marginal relevance of poor recruitment of staff and unsatisfactory relation between career and professional development and of all round decline in discipline and efficiency. No nation can really progress unless there is some discipline in every sector of society. Why should democracy mean chaos ? Why should democracy mean only rights and no duties ? Agitations or threats of agitations plague the educational institutions on absolutely non-academic issues. A recent survey conducted by the National Commission on Teachers in Higher Education revealed that the average number of working days on which classes|laboratories|tutorials etc. are held is now around 145. Every teacher is entitled to various kinds of leave and this further reduces the effective working days. This is shocking because an "average" means that lots of institutions have a substantially lower number of useful working days. This should be looked into by the institutions themselves and the teaching days can easily be approximately increased by 50 per cent with the same inputs. Even in the democratic system, of functioning why should institutions be allowed to be held to ransom on non-academic issues in a poor country like ours ?

The education has expanded in an absolutely unplanned manner especially since 1960's without proper facilities being planned and created. In the last three decades the cost per student has increased about five-folds for primary, 3.5 for secondary and 2.5 for higher education. These figures do not tell the whole truth because of general price rise of the inputs. The naked truth is that at constant prices, expenditure per pupil for higher education shows a significant decline. Practically every well established institution has several times more students now than its enrolment 15 or 20 years back, but the physical facilities have improved only marginally with the result that the working conditions of the teachers, facilities of library and laboratories have worsened and so has the living conditions of the students. Discipline and studies have therefore been worst hit.

Bare minimum facilities needed !

We can not deny the fact that the higher education canot deliver the goods unless it receives a motivated groups of students who have gone through proper primary and secondary education. Our data shows that we have one primary school at every mile and a secondary school after every mile and a half, but unfortunately in a majority of schools the basic infrastructure is sadly underprovided which is one of the major reasons for high drop out rate. The bare minimum facilities in all the educational institutions starting from primary to higher education will have to be provided.

Today's education system has in it a very high degree of inequality. The inequality is between what we have in urban areas and what we have in rural areas. In general, urban schools are good, rural schools bad. There is also a great degree of discrimination towards half of our population namely, the girls. Women's education is a neglected area, neglected in the sense that we may have good enrolment figures in the beginning but if we take the drop out rates, we find that comparatively very few girls complete their education. And if we expect that we will be able to compete with the world neglecting half of our population, we are deceiving ourselves

Tapping human resources !

India is a country whose population is often referred to as its problem. While it is true and we must go ahead with our family welfare programmes, why can't we consider the population as its source of strength as well. Here also there is inequality. The effective position is that today our scientific manpower is derived not from a take off population of over 700 million but of say only 25 million I repeat only 25 million, meaning thereby that we are not tapping a source of 675 million. This means that on the one hand we have allowed people to become scientists and technologists who may not be intrinsically fit for the job and on the other hand we are not using our entire gene pool because a very high fraction of our population who may be intrinsically superior could not go through the educational process. In Third World countries including India only a very small proportion of the relevant age group goes for higher education. In most Third World countries the medium of instruction is one of the European languages. Knowledge is produced in advanced countries and is exported to the Third World through their books and journals. A point of great importance and extremely relevant is that in the Third World countries including India, education is sadly considered as peripheral. In Europe even in smaller countries, education is considered as central and the universities play a very important role.

If we are sincere in our desire to take our country to the 21st century with a proper place of respect, we will have to give a better and central place to education and not a poor, neglected, peripheral place We started the First Plan by spending 7.5 per cent of our GNP on education and have now reduced it to about 2.0 per cent. As I have already pointed out that our educational institutions from primary to university are grossly underprovided. If we are not prepared to invest in education today we are inviting disaster. The education budget for the year 1985-86 that of Rs. 513 78 crore as against Rs. 448.74 crore of last years is a sad reflection of our tall talks. I am told it is lowest in the history of education budget since our Independence in terms of the percentage of total budget, it is about 1.2 per cent of the budget I only, hope that our nation and our leaders will not wait for the disaster to wake us up from our deep slumber.

(Continued from page 11)

The study has also indicated that the flow of institutional finance has shown an increasing trend to help both the tribal and non-tribal farmers. Rather some of the financial institutions have advanced more loans to non-tribal farmers than the tribal farmers This may be due to the fact that demand for credit is not for the coming from the tribal farmers in such a case an effort is needed by the extensions agencies to make the tribals to take to new technology of agriculture and thereby increase their demand for credit and raise their level of farm incomes. Such a step can help to lift the tribal farmers from the morass of poverty and destitution and bring them into the main stream of national development.

Afforestation programme

The afforestation effort is being stepped up with the object of bringing 5 million hectares of land every year under fuelwood and fodder plantations.

The Centre has taken steps to initiate an indepth study on substitution of wood and wood-based products. The State Governments will be informed of the steps to be taken by them, after this study is completed.

(Continued from page 24)

Finally, while the state of Indian science given us cause to despair, the scope remains uncharted. What we must remember now is that the legacy of science was passed to us through abstract thinking and that is the way it must pass on. Reform must begin with knocking down the rigid structures that separate science from the vast sea of humanity that is India

The new textile policy

Amlan H. Choudhury

The new textile policy was announced by the Government on June 6, 1985. The author, in this article, says that new policy was long overdue and has come as a relief to the industry. He has welcomed the keeping of handlooms in weaving sector and says this will make it more employment and export-oriented. The author, however, criticises the policy for not giving any time bound programme for strengthening the industry.

THE NEW TEXTILE policy, announced by the Government on June 6, 1985, is a liberal one as it seeks to eliminate, modify and phase out the controls and regulations on the textile sector whose expansion and growth was marred by several curbs

The textile industry which employs millions of people, especially from the rural areas, also provides one of the basic necessities of life. But it was certainly a neglected sector infested with sickness and several structural weaknesses. The industry so far was guided by policy framework announced as early as in March 1981 The industry really needed a fresh look and a pragmatic appraisal of its various problems and bottlenecks. Hence the new policy came as a relief to the industry which has a vast potentiality for expand.

Rehabilitation fund

Though it is premature to predict anything about the working and success of the newly announced policy, however one can be sure that it would certainly be able to prevent sickness of the textile mills and safeguard the general interest of the workers during closure or liquidation of any mill This is because of the fact that the new policy envisages formation of a rehabilitation fund, to be financed by a suitable cess on the textile industry, which will provide relief to the workers thrown out of job following permanent closure of a textile mill or a unit. In the earlier policy announced in 1981, this provision did not exist.

For over 18 years, the textile sector was subject to stagnation, sickness, and managerial flaws. The machinery and equipments used in the sector are not only outmoded, but also not fit for the mass production due to the lack of adequate finance and proper rationalisation of the industry.

In 1951, the Government divided the textile industry into three different sectors—handloom, powerloom and mill. Such a sectoral policy had resulted in the unhealthy and lopsided growth of the textile industry as a whole. None of these separate sectors could be developed properly and made competitive enough to stand in the world market.

A positive step !

But the new textile policy has rightly abolished the narrow sectoral approach and rightly divided the industry into—powerlooms and handlooms. This is a positive step towards accelerating the modernisation of the textile industry.

The new policy would make it obligatory for all powerlooms in both the organised and unorganised sector to register themselves.

The textile industry, henceforth, have fuller flexibility in the case of different types of fibres, a healthy atmosphere for growth and would be viewed at every stage of spinning, weaving and processing.

Besides streamlining the public distribution system of Janta cloth and controlled cloth, the new policy would ensure that quality cloth is produced. It is a

well known fact that the textile industry subject to a policy mix for years together as it was viewed in a compartmentalised manner. To remove this the main thrust should be do away with structural rigidity. The new policy, it seems would be able to do that.

Overall improvement aimed !

The new policy envisages among others, labour rationalisation, formation of a nodal agency to evolve and manage financial package for potentially viable textile units, advanced marketing, replacement of old equipments, introduction of scientific technology, better management and removal of sickness and structural weakness

The importance of sericulture has been adequately recognised this time so far as its job potentiality and capital generating capacity was concerned. The new sericulture policy would certainly make the sericulture sector more capable of earning sizeable foreign exchange.

The government has rightly accorded priority for the optimum utilisation of spinning and weaving sectors because of their high yielding potentialities But for this purpose production of raw materials must be increased. Preservance of handlooms in weaving sector is also a good step. This also make it more employment and export oriented. Formation of a standing advisory committee with representatives or workers, textile technologists, management and banks and other financial institutions in the near future is a right step towards achieving this goal

Though late, the government has rightly found but that take-over or nationalisation of a sick unit or mill could not be a permanent solution to the problem of industrial sickness. Such sick units or mills should be helped otherwise to stand on their own legs as a viable unit. The new policy clearly states that it would not nationalise or take over any sick unit or mill in the textile sector, but would help it through expertise, fund and other corrective measures This is a right step the government has taken.

But the new textile policy is not an unmixed blessing. It has certain weaknesses too. For example, it does not offer any adequate proposal on how to tide over the raw material problem, i.e., shortage of cotton which has plagued the industry. It is surprisingly silent on the issue whether the cotton will be imported to create a buffer stock.

The biggest plan of the new policy is that it has not given any time bound programme for strengthening the industry. When the whole textile industry in the country is passing through severe problems of marketing their finished products, the new policy makes no proper reference to it. But overall, the policy is dynamic, timely and pragmatic approach.

(Courtesy : All India Radio)

National conservation strategy

The Union Department of Environment is preparing a National Conservation strategy to provide a perspective plan for integration of environmental concerns in developmental projects. For this purpose 24 sectors have been identified.

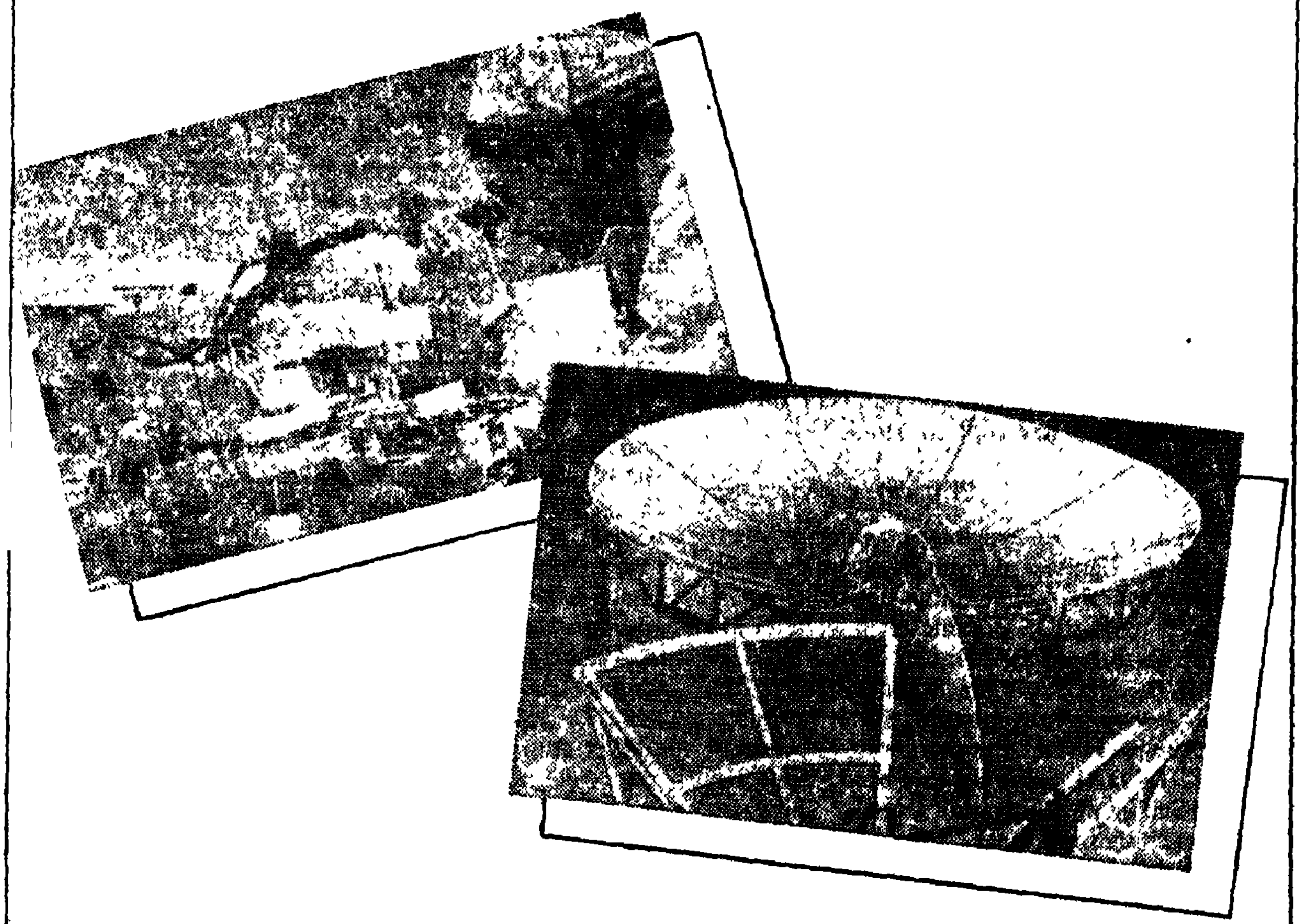
While significant progress has been made for control of industrial pollution, the discharge of domestic wastes continues to be a major source of pollution To provide a basis for water quality management with attendant measures for prevention of pollution from different sources, zoning and classification of all the 14 major inter-state rivers has been completed Basin-wise inventories based on detailed source-to-sink surveys have been prepared for the rivers, Yamuna and Ganga

For selected polluting industrial projects which come under the purview of licensing sytem, formalised procedure has been evolved so as to ensure that environmental considerations are taken into account right at the site selections stage. Environmental guidelines for siting of industry have been recommended outlining the considerations for site selection, environmental impact assessment and requirements for environmental management during implementation of such projects. A policy paper for legislative and institutional framework to regulate the import, manufacture, handling and disposal of hazardous substances of toxic chemicals and micro-organisms has been prepared. The Department has also prepared a document recommending Threshold Limit Values (TLV) for selected hazardous substances in the work environment.

The task of preparing guidelines on environmental impact, for sectors in which regular assessment by the Department was not done, has progressed to include shipping and harbours, and human settlements

Apart from technical guidance for prevention and control of pollution, pilot demonsfration projects such as the one on improvised design of reverberatory furnace suited for small scale industries have been taken up. Programmes for waste recycling in selected locations have been worked out. Instrumentation facilities as required for pollution monitoring and control are being developed alongwith training of personnel.

Fiscal incentives are also provided in terms of rebate and tax concessions for installation and satisfactory operation of pollution control equipment as also for shifting of polluting industries from the congested areas. ☐



Performance of central public enterprises in 1984-85

Yojana Correspondent

An overall assessment of performance of the Central public enterprises, made by the Bureau of Public Enterprises, for the year 1984-85, reveals that many public enterprises improved their performance during 1984-85 over the level attained in 1983-84. A record level of net profit is estimated for the year ended March 31, 1985.

Financial performance

The financial performance of Central Public enterprises as a group shows considerable improvement during 1984-85 as compared to 1983-84. The turnover increased from Rs. 47,294 crore in 1983-84 to about Rs. 53,600 crore during 1984-85. The net profit earned by public enterprises as a group is estimated at Rs. 956.12 crore as compared to Rs. 245.67 crore recorded in the previous year. Profitability ratio in terms of gross profit to capital employed shows increase from 11.94 per cent during 1983-84 to around 12.5 per cent in 1984-85.

Physical performance

The performance of enterprises producing steel, super alloys, coal, lignite, aluminium, copper, iron ore, rare earth minerals, crude oil, petrochemicals, fertilizers both 'N' and P_2O_5, organic chemicals, crude throughput, lubricating greases, insecticides, engineering goods (BHEL, BHPV, Burn Standard BPMEL, BBVL, HEC, Jessop, Tungabhadra Steel Products, Triveni Structurals, HMT, Praga Tools, Andrew Yule, BEL, ECIL, HAL, Hindustan Cables, National Instruments, Hindustan Shipyard, Cochin Shipyard, National Bicycle Corporation), consumer goods, such as opthalmic glass, newsprint, photo films, etc. shows improvement during 1984-85 over the previous year.

Fall in production

Industries, such as zinc, lead, sponge iron, gold, manganese ore, pyrites ore, refractors, cement, drugs and pharmaceuticals, engineering goods produced in Bharat Wagons, Jagan jute, Mining and Allied Machinery Corporation, Richardson and Cruddas, Bridge and Roof, Bharat Pumps and Compressors, Central Electronics, Hindustan Teleprinters, and ITI, have recorded fall in production during 1984-85. Consumer goods produced in ALIMCO, Hindustan Latex, Mandya National Paper Mills, Modern Food Industries and TAFCO have also declined in output during the year under review. Textiles produced by National Textiles Corporation also recorded fall in production

Capacity utilisation

Capacity utilisation of saleable steel was 73 per cent and 5283 tonnes as against a target of 7.2 million tonnes during 1984-85, of the aluminium 87358 tonnes against a target of 1,00,000 tonnes and 87 per cent of copper 86 per cent and 41,021 tonnes against a target of 47,500 tonnes, of zinc 64 per cent and 50,795 tonnes against a target of 79,000 tonnes, of lead 47 per cent and 14,160 tonnes against a target 30,000 tonnes, of fertilizers 'N' 62 per cent and 1845 Th. tonnes against a target of 2,986 Th tonnes, of fertilizers P_2O_5 52 per cent and 345 Th. tonnes as against a target of 658 Th. tonnes. The crude oil production in 1984-85 was 28.99 million tonnes compared to 26.02 million tonnes in 1983-84, raw coal (Coal India) 130.84 million tonnes compared to 121.41 million tonnes in 1983-84 and lignite 7.11 million tonnes against 6.63 million tonnes in 1983-84.

Achievements

Target achievements of major groups of industries recorded during 1984-85 were steel ingot 87 per cent, saleable steel 97 per cent, coal 99.8 per cent, lignite 109 per cent, aluminium 109 per cent, zinc 89 per cent, lead 57 per cent, copper 93 per cent, iron ore (NMDC) 99 per cent, fertilizer 'N'. 90 per cent, fertilizer P_2O_5 104 per cent, petroleum crude 98 per cent, petroleum throughput 102 per cent, and cement 87 per cent □

BOOKS

Cotton Marketing

Marketing Channels and Price Spread in Cotton; by C. G. Panade, R. B. Singh and K. H. Rao, published by Centre for Management in Agriculture, Indian Institute of Management, Ahmedabad. Pages 94.

Cotton, the white gold, is one of the most important cash crops grown in India. The area under cotton is about 25 per cent of the total area under non-food crops. Area, production and yield of cotton experienced substantial increase after Independence. Since price received in the market acts as an incentive to farmers and influence the acreage under cotton, the structure of cotton market has a direct bearing on the purchasing power of the farmer as well as on the acreage allocation decisions. Cotton marketing has been undergoing substantial changes in India because of regulations and interventions by the Government on the one hand, and organised activities of traders and farmers on the other The Government's regulations aim at increasing production of cotton while assuring a fair return to the producer, and a reasonable price to the consumer, and also to avoid gluts and shortages by means of buffer-stock operations. Accordingly, the Government introduced a package of programmes which would help in reducing the marketing costs and thus increase producers' net share

The analysis in the book reveals that almost all the channels under private trade, the small farmer receives lower price than the large and medium farmers. In contrast, in the cooperative channels, the large as well as small farmers receive an equal share in the price of lint and seeds. Moreover, the share of farmers in the price of lint and seeds is higher in cooperative marketing than that in the private channel. Thus, a comparison between private and cooperative channels functioning simultaneously in a cotton growing area shows that again the cooperative channel is beneficial to farmers. Further, the share of farmers in the price of lint and seeds is lower in an area dominated by private trade than that in the private channels where cooperatives also function simultaneously. Another point brought out in the study is that the acreage allocation decision of farmers regarding cotton is subject to various economic variables such as the previous year's acreage under cotton, the previous year's price and yield of cotton and substituted crops, and variation in relative prices over time.

On the basis of the findings of the study, a number of recommendations have been made in the book. An important suggestion is that in an area where cotton is a major crop, and where there is only private trade, it is essential to organise farmers to form cooperatives, as the benefits of cooperatives are significant to farmers as compared with those in private trade. Another important suggestion is that the farmers need higher marketing advance from cooperatives than that offered with the help of refinance from the Reserve Bank of India.

The book is a commendable in-depth study of the subject, and throws light on crucial issues such as the different marketing channels through which raw cotton reaches processing factories and lint and cottonseed markets, the effect of marketing systems on the acreage decisions of the farmers etc. It also compares the cooperative and private cotton marketing channels in-depth and clearly shows that cooperative marketing, with vertical integration, helps the small farmers.

The book will be useful to economists as well as to administrators and policy-makers in the cooperative sector and Government.

S. N. Khanna

Managers and computers

A Manager's Guide to Information Technology by John Eaton and Jeremy Smithers; Heritage Publishers, New Delhi; pages 346; Price Rs. 150.00.

A quarter-century ago, the advent of the computer into the field of business and industry revolutionised management. This was the beginning of the availability of systems by which one could store information—analysed and ready—for further analysis or retrieval and of systems of performing a variety of operations in fields such as inventory records and payroll. The computer as such has been for the manager, easy to live with. In brief, one hired an expert and left it to him and his corps of assistants—systems analysts, programmers, and the like, helped of course by the experts of the firm selling the computer. Computers available some two decades ago had in effect very limited capabilities. Programmes intended to tackle even modestly complicated problems took long to formulate and even longer to debug. The computer, was also extremely expensive.

The situation has changed radically during the last two decades with the entry of the mini-computer and then of the microprocessor. Not only has the capital cost decreased considerably, but the new inventions have made it easy to use the machines. In fact, with some slight coaching, the manager can, if he so wishes, dispense with the operators and operate the machine himself. These developments have made it necessary for managers to understand how computers work, what they can and cannot do and developments in the offing.

Eaton's and Smithers' "A Manager's Guide to Information Technology" introduces managers to the

significant elements and characteristics of the new information technology, including use of the range of computers now available and other electronic systems.

They commence by outlining the development of data processing, which is fascinating for those who have encountered different generations of computers from time to time and wondered at the technological developments behind these machines. This exposition is necessary as on still comes across old machines occasionally. Many organisations were using IBM 1401 machines till recently and some may still have them today.

The basic operations involve in the use of the computer are dealt with next. Starting with an explanation of the physical equipment and its characteristics, elementary but sufficient for those most likely to use this book, the authors go on to discuss software—the process of instructing the computer. The commonly used computer languages are described briefly and the operating system lucidly explained. The development of new systems which enable the computer to monitor itself and manage the operating environment are explained as the characteristics of batch processing system, multi-programming, time-sharing and real-time systems. The development of aids to management is described in some detail in the section on office automation, which has to be read in the light of technological developments outlined in the section on the microchip and micro-technology. This leads naturally to an exposition of the variety of uses to which these developments have fed and to a fascinating purview of developments which are in the offing, like the electronic office and the general purpose robot.

This book gives an encyclopaedic coverage of the aids to management, developments in telecommunications and different types of equipment which are available or are likely to be available in the near future. Unfortunately, this extremely wide coverage may prove a deterrent to its acceptability Few managers will want to know all that the book covers. Most would be content with a passing acquaintance of the hardware required for various applications but would like to know a great deal more about specific programmes and applications. It is rare to find a manager, outside of the electronic data processing community, yet interested in studying the entire range of items in which micro-technology has been used appliances, environ mental control, industrial gadgetry tele-communications equipment, and so on. For such a person this book may be too elementary. Nevertheless, useful addition to the library, for occasional consultation or source material.

A. C. Bose

Veer Savarkar

Five Stormy Years—Savarkar in London, Harindra Srivastva, Allied Publishers, New Delhi, pp 326 Rs. 75.

India's struggle for freedom was a long drawn out phenomena. The fear psychosis, which ultimately made the British quit India, emanated from a whole chain of events beginning with what Mangal Pande did in the first instance in 1857 to what Mahatma Gandhi did in August, 1942 by giving out a firm out-burst of Quit India slogan. It is a history of active to passive and passive to active resistance.

Veer Savarkar was one of the sons of the soil, as great as any other, on the national scene. The volume under review narrates all about the aweful happenings that took place in London from June 1906 to June, 1911 in which Savarkar played the pivotal and vital role of an active revolutionary.

Harindra Srivastva, has done more than mere justice to the cause of presenting a phase of history in its true perspective. Through a highly readable narrative, he has not only delineated Savarkar in the context and texure of the events but also highlighted him as a figure to reckon with in the national roll-call of honour. There can be no denying this significance to Savarkar. About one of his statements, Churchil had remarked "the finest ever made in the name of patriotism." As an orator, while giving a speech, on the eve of celebrating Guru Govind Singh's birth anniversary in London, it is said about him "in the lighted, moving and inspired atmosphere created by Savarkar even the magic of India's greatest orator Surinder Nath Bannerjee, the heart-force and fire of Bipin Babu the freshness and fervour of Lajpat Rai and the polished diction of Syed Raza paled into insignificance

To sum up, if Savarkar is a veritable hero to reckon with, in all respects, the writer has made the historic write-up quite heart-rending, by first-hand description of all that occurred in those stormy five years of Savarkar's life.

The volume is free from mistakes. For its decent get-up, quality of print and the valuable contents, the price factor is acceptable.

R. P. Rahi

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Illiteracy to go by 1990

GOVERNMENT IS COMMITTED to eradication of adult illiteracy in the age-group 15–35 by 1990. Union Education Ministry has formulated a new scheme of mass movement of Functional Literacy for implementation during the Seventh Five-Year Plan. In this scheme the main thrust will be on developing a massive programme which should be a mass movement involving employers, trade unions, universities and colleges, voluntary organisations and the youth. Each educated person, in which students are expected to play a leading role, would be expected to take some responsibility for imparting literacy. Nearly 11 crore of adult illiterates in the age-group 15—35 are expected to be covered by the literacy programmes during the Seventh Five-Year Plan.

The Education Ministry will intensify existing programmes of Rural Functional Literacy Projects, State Adult Education Programmes, Scheme of Assistance to Voluntary Agencies, Nehru Yuvak Kendras, University Grants Commission and NSS. It will lay greater emphasis on the utilisation of all available community resources for making it a people's movement. Priority in this regard will be given to women and people belonging to Scheduled Castes and Scheduled Tribes. Post-literacy and follow-up programmes will be strengthened by opening Village Continuing Centres which would act as fora for follow-up programmes, group discussions and interaction amongst neo-literates.

During the Sixth Five-Year Plan nearly 2.3 crore adult illiterates were enrolled. These schemes are being operated mainly in rural areas, covering all districts in the country, with special emphasis on districts with literacy rate below the national average. Due emphasis has been laid on the coverage of weaker sections of the society such as women, scheduled castes and scheduled tribes, agricultural labourers and slum dwellers. The State Governments have been advised to ensure that out of the total enrolment, at least 50 per cent should be women, 30 per cent scheduled castes and 15 per cent scheduled tribes learners.

In order to encourage participation of women in the adult education centres special awards have been given to the five best centres in each district, one district in each State and State level awards to those who have excelled in the field of women's education. To involve voluntary organisations on a larger scale for implementing adult education centres for women, the scheme of grants-in-aid has been amended to relax the minimum number of centres from which grants can be given to voluntary organisations, from 30 to 50 in case of women. This relaxation has been made after a meeting of the voluntary organisations held by the Education Secretary in January, 1984. Voluntary organisations have also been requested to give priority to opening centres for women, scheduled castes and scheduled tribes. □

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India in for massive use of computers

INDIA WILL SOON enter an era when computers will be common in all walks of life and inability to handle them will mean the same kind of disability which arises from the ignorance of the three Rs. Production technologies will use computers integrally in control of processes, in processing information and in management of the plants.

The Union Education Ministry has a long-term goal where every student would operate computer as a tool. As a part of Computer Literacy Awareness Programme, computer programmes have already been started in 250 schools in the country. Another 500 schools are likely to be added shortly to the pilot experiment schools, distributed throughout the country in rural and semi-rural areas, towns and cities. It has been planned to expand the Programme to 10,000 schools by the end of the Seventh Plan.

About computer vocational courses, curriculum and other details are being worked out and the focus will be on programming and operations. During the year all the engineering colleges are being provided funds for computer systems. Twenty polytechnics will also be provided funds for computer systems during the year. It is hoped that the remaining 390 polytechnics will also be covered during the Seventh Plan.

As a tool of information technology of the future, computers can give direct support in the areas of agriculture, health and education. The use of computers in providing health services will allow monitoring the health status of individuals and groups of population and taking preventive action in time in case of epidemics and other emergencies. In the area of education, computers would serve the enhancement of the capabilities of human mind. Research in monsoon dynamics, earthquake engineering, flood forecasting, virology, genetic engineering, is already unthinkable without the assistance of computers.

About 70 percent of the nation's population has been brought within the range of T. V. transmitters. The Ministry of Education is implementing an educational T.V. programme using the satellite for six States in the country. Steps have already been taken to acquire programme production capability in the educational sector in some of the language regions and we hope to cover the remaining regions in the next few years.

A large number of computers to be used will depend largely on the price and cost structure of the technology. The country will by and large encourage indigenous industry and will go in for imports only where it is unavoidable.□

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WHY LIVE WITH NONSENSE

Arrest religion

Romesh Thapar
Hiren Mukerjee
Justice V.R. Krishna Iyer
Irfan Habib
K.A Abbas

Promote humanism

P.N. Haksar
Vasant Sathe
Yash Pal
Jamal Kidwai
Mohit Sen
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Refashion education

P.M. Bhargava
Malcolm S. Adiseshiah
Rais Ahmed
K.N. Kabra

Use the media

Nikhil Chakravartty
Khushwant Singh
N.C. Menon
P.C. Chatterjee

"Someone once said that from Yajnavalkya to Vivekananda we have had an unwholesome surfeit of inspiration. It still seems easy to brag of our 'spiritualism' forgetting that it has been little more than a mantle of myth in which to keep ourselves warm against the cold blasts of misery and humiliation. Our elite, intellectually indigent and spiritually sluggish, do not hesitate to grovel before new-fangled 'god-men' who are found twenty to a dozen in our haunts of power and pelf......
The emergence of exploitation, the reign of avarice in the long annals of society, the sinister sophistications of centred activity account for the crimes that have sullied history's pages in the name of religion, and in our Indian predicament threaten to darken and degrade our very being."

HIREN MUKERJEE

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ARREST RELIGION !

PROMOTE HUMANISM

REFASHIONING EDUCATION

USE THE MEDIA

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Enough is enough !

How this depressing scenario—violence, communal clashes, a wave of fundamentalism—we see in our midst today? How have we landed ourselves into this quagmire? Why this dreadful divide into our lives?

Join us, dear reader, in our exercise to probe this tragic phenomenon! Let's first identify the ugly hand at work and then examine the strategy to meet the menace. The endeavour here is not to enter into details, but to keep to the phenomenon as such.

Let's then start. Growing up in our families under the influence of, what we call, *'our heritage', 'our rites and rituals', 'our holy scriptures'*, we step out into our wide world, designed and managed by a host of politicians, bureaucrats, preachers and godmen. Others, who matter most in creating *'the system'* for us, include our elites from the business, the professions and the world of letters. Deserving special mention here are our media men, who actively influence 'the system'. But, don't forget, all those who devise it belong to us, very much our part and parcel.

The mute majority as such constitutes the base on which 'the system' stands and its shape and strength reflect our very image. And, what are we? We, in our wide world, like to flock in strength with those who are our likes—Hindus, Muslims, Sikhs, Christians and what not! We get emotionally involved with the ethos of our community and even swear to live by and die with it. As life goes, our scriptures, our preachers, our community leaders fortify the pride and prejudices in us and we, wittingly or unwittingly, become a fertile field for our crafty leaderships to operate. We are not schooled as such to stand up to all that goes with it and use our brains. More often than not, we are used as is willed by them. And so, life goes on—living in the midst of mutual bickerings, violence at intervals and so-called peace in between Communalism, yes, communalism all the way!

But, is this communalism any new phenomenon in our life? Certainly not. It has been with us all through; in fact, an integral part of our heritage. Communal riotings, killings and arson have all along been a way of life with us. During alien rule, for political reasons, we could blame aliens for activating the virus but the very history of our freedom struggle stands witness to the fact that the virus has all along been present and active. *Victims of the virus, divided we stood then; victims of the virus, divided we stand today. Divided then, we divided India, divided today, we are sowing divisions The villain of the piece, then, was religion; the villain of the piece, now, is religion.*

Your attention now, dear reader. We are reaching the climax of this tragic drama.

As people, our entity is of mere crowds. We grow and go out in life as our environs permit. At homes, it is our 'culture' and 'heritage' which mould us; at schools and colleges, it is our 'education' which prepares us for life in the open; and in the wide open, it is the 'system' which determines our destiny. And, who runs 'the system' for us?

Obviously, it is the administration we give to ourselves which works 'the system'. The mandate we have given it is clear—socialism and secularism. Let's see how it follows the mandate!

The focus here is not on socialism, which, of course, we take up and discuss in our column round the year, but on the mandate called secularism.

'Religion as practised today is the greatest separatist force. It has in our day-to-day life come to signify bigotry and fanaticism, intolerance and narrow-mindedness, selfishness and the negation of many of the qualities which go to build a healthy society.'

—Moti Lal Nehru, 1922

"Communalism, yes, communalism all the way. Victims of the virus, divided we stood then, victims of the virus, divided we stand today. Divided then we divided India; divided today, we are sowing divisions. The villain of the piece, then, was religion, the villain of the piece, now, is religion."

Believe it, our government, in all sincerity, and to the best of its capacity, works to promote secularism, communal harmony, national integration and patriotism. It has the means, exclusively at its disposal, to instantly reach millions of our homes in far-flung corners of our blessed country. It uses its media, with all the skill at its command, to sell secularism. But, as you know, it is *via* our religions *only*, to spread the "message"—we are one; in our diversity lies our unity; tolerance is our proud heritage; our traditions are rich and unique; our religions promote universal brotherhood and our scriptures pave for us the path to spiritualism. To give lessons in secularism and to develop, what is called, a "composite" culture, it uses all scriptures to cater to all interests. It works to satisfy spiritual needs of all people *via* all scriptures. And, to build up and strengthen our emotional base it faithfully implements National Integration Council recommendations, including observance of National Integration Day.

Take it, dear reader, (we are insiders, after all) this, in brief, is all that constitutes government thinking or, call it, policy on implementing the mandate, called secularism. What, then, is the net result? Are we any better or any nearer our goal? After all, truth is truth, and better one faces it, they say. It's time now, we venture to warn, it is time to face it, and face it squarely and boldly. Let's be honest and have the courage to admit that our efforts so far in this direction have failed us! We remain today just as much divided as we were before August 15, 1947. Why not, we dare ask, give a serious look at the very approach itself. If it doesn't work, it can't be of any worth. And, how could it be so when not based on rational thinking! We have put up with it far too long now. It's time to sit, think and act in search of suitable alternatives.

We must now sift sense from nonsense; composite culture from composite nonsense and take to all that makes sense.

We do not, dear reader, claim all the wisdom to pronounce judgment on all the nonsense we live with and all that makes sense in life. To do the job, we bring to you the leading lights in the country, to spell out what really makes sense in life. It is how we approached these luminous minds.

"Why not now decide and

(i) arrest religion and see to it that it remains confined to homes and places of worship alone;

(ii) divest government of its traditional role in selling religions and make it work to promote rationality and humanism;

(iii) base all education on rational explanation of human growth and teach rationality and humanism in our educational institutions; and

(iv) use government media, *not* as it is used, but use it to promote humanism and rationality."

The response, believe it, has been tremendous. As you go through the pages, you would join us and ask with us—enough is enough; why live with nonsense; this composite nonsense has no sense. Let's then work to reach the year 2001 as a united, secular, rational and a vigorous people.

*With twin now born to us—*Yojana *in Kannada and* **Yojana** *in Punjabi—we make a full dozen today to reach you simultaneously in English, Hindi, Urdu, Punjabi, Gujarati, Marathi, Telugu, Kannada, Tamil, Malayalam, Bengali and Assamese.*

—Chief Editor

Arrest religion

If I were king today, I would . . . !

Romesh Thapar

YES, IF I WERE KING, CHARISMA ENDOWED, DEMOCRATICALLY CHOSEN, A FOCUS OF POWER AND PATRONAGE, WITH MINISTERS TURNED INTO SERVANTS AND SERVANTS INTO MINISTERS, AN INDIAN CREATURE IN EVERY RESPECT, I WOULD AT THIS MOMENT OF DISARRAY AND STUPIDITY INCISE THE SEPTIC FOCUS, THE OLD NARCOTIC OF BASTARDISED RELIGIONS AND RELIGIOUS PRACTISES, NEUTRALISE IT, DRAIN IT, RESTORE MORAL AND SPIRITUAL HEALTH THROUGH A HEAVY INJECTION OF HUMANISM, RATIONALITY AND GOOD SENSE.

I WOULD USE—YES, RUTHLESSLY—THE MEDIA IN ALL ITS FORMS, PARTICULARLY THE ELECTRONIC NOW INVADING THE URBAN AND RURAL HABITATIONS, AND I WOULD SQUEEZE EDUCATION OF ALL ITS DIVISIVE CLAP-TRAP OF HOLY BOOKS, GODS AND GODDESSES, OF SO-CALLED MIRACLE-MAKERS, QUACKS AND CHARLATANS; IT WOULD BE REDUCED TO CAREFULLY RESEARCHED HISTORY.

I CAN ASSURE YOU THAT IT IS NOT AN EASY TASK because over the centuries we have unconsciously been integrated into a style of thinking and behaving as if the ritual of religion, its depraved form, is more vital than the message the sages preached in the past when life was violent, unstable and meaningless, when human beings were emerging from a kind of animalised, brutish existence. Well, men and women have been profoundly transformed. Their inner humanity has been salvaged despite massive waves of criminality and evil. But religion and religious mumbo-jumbo have remained evergreen seeing endless mutations, on the specious plea that humanity cannot live without such ministrations.

Invariably, the lines are sought to be drawn between the religious and the irreligious. Seldom is the fact highlighted that religious hypocrisy is a cover for all kinds of criminality, that those who bow before their gods—and their "holy" books—do so only to salve their guilt. And this guilt is enormous and ugly, particularly in our dear triple-faced land. An exaggeration? Think about it. It's very close to the truth we are running away from.

If this were not so, India would certainly be among the most enlightened, the most gentle, the most thoughtful and the most moral of the world's entities—and I would not need to dream of kingship and its power to carry through a transformation. We pack our temples, mosques, gurudwaras, viharas and churches to cultivate the basest emotion—that only what I believe in is relevant, basic. The rest, presumably, is trash and must be put to the torch, or so it would seem from the practise of religion over a sub-continent of 750 millions—and elsewhere, too, in various historical periods.

WHETHER IT IS THE VEGETARIAN HINDU INCENDIARY who destroys Harijan and Muslim at the slightest provocation to "assert" his ascendancy (and now even the Sikh who was once his blood brother, but became too assertive and arrogant!), or the Muslim, Shia or Sunni, Bohra or

Why live with nonsense

Momin, who feels that his future is at stake if his religious laws are given a touch of enlightenment from the medieval days when they were enunciated restricting his right to take more than one wife, or the Sikh who has lost the anchorage of basic tenets of his faith and is tied up in the militancy, now irrelevant, preached earlier by the Gurus who fought later-day Moghul injustice, or those who are for ever seeing in some god's name the conversion of one rigidity into another ; the turmoil must be seen as the diseased *realpolitik* of corrupted political perspectives, the scenarios of those who want to use the "Holy" books, the gods and goddesses, the saints and the seers, to perpetuate the rapacious exploitation of the ordinary, trusting people.

In India, these aberrations assume dangerous dimensions. Our people are still encompassed by mumbo-jumbo from endless religious charlatans who know nothing of history or of social change or of a real morality. The daily frustrations of life and living feed upon the religious mumbo-jumbo. After all, what books do the neo-literates read except religious tracts. There is little else available in translation. The mafias that rule obviously intended the explosion of literacy to become an explosion of religious fundamentalism. The politicians respond at the same level, making grotesque efforts to become the gods of the people, bending TV and radio to that end until the entire populace is bewildered, confused.

PASTE ON YOUR HINDUISTIC CASTE-MARKS and your symbolic *tikkas* you sinners of modern India—yes, even within the imitative five-star culture you have spawned! Deck yourself in saffron turbans of vengeance, against the teachings of the Gurus even though you lack the courage to speak the truth about what really goes on ! Trim your beards, Maulvi-like, to demarcate yourselves even as you chant parrot-like your prayers in languages that are unfamiliar, and pass on this "culture" to those who see the "light" in following you ! Become the followers of a non-violent Buddhist dharma, for it does not really prevent you from taking a tooth for a tooth, or two for one!

Aren't we all rearing to baptise ourselves in each other's blood. Witness of late Bhiwandi, Delhi, Kanpur—and, now, Ahmedabad where everyone is killing everyone. Anger, vengeance or revenge, envy—it's all in the game of asserting yourself in the name of religion. *Loot-maar* is the popular name. Religions and castes and classes and ethnicities spark the conflagration, but the instruments are all of us who are very much involved in one way or another. Yes, accessories to the crime.

But let's not abuse ourselves or the people, our people. They aren't the real culprits. They are the victims, foolishly and stupidly so, but so nonetheless. Who made them so ? The so-and-sos who call themselves teachers, journalists, communicators, the moulders of opinion, the tribunes of the people, the *netas* gathering their gangs and their votes, in the name of their gods and goddesses, their "holy" books, and with all the self-righteous cant you can imagine.

MAKE NO MISTAKE ABOUT IT. I want to be king because the cancer of religious mumbo-jumbo, once described as opium, works in a thousand different ways, and at every level the sponsorship is by the powerful and the influential in our land.

> The religious hymns "of all religions" take over the early hours, entering each home, announcing not the beauty of the hymn but the mystery of faith, its power to fog the aesthetics inherent in our continuities.
>
> The little prayer as the dirty, inefficient shop is opened as if it is this ritual that ensures business, corrupt business usually.
>
> The vegetarian discipline, never explained as a historical product, seen only as a "holy" protection against pollution.
>
> The *jhatka* and the *halaal,* again made religious, without reference to the evolution of social practice.
>
> Brahmin cooking as against Harijan, irrespective of who produces the better food today.
>
> The hand that washes the arse must not be the hand used for eating, soap notwithstanding.

AND SO IT GOES ON, this array of the old and valid taboos of a bygone age mixed with an overlay of religious superstition and cultism of the worst kind. It all ends up in our so-called places of worship, labelled sanctuaries, very often misused, largely squalid and ill-kept, now sprouting wherever some rapscallion wants to grab public land and even facilities along a road or a highway. Keep your eyes open. You will see them everywhere, septic foci and certainly no indicators or anchorage to any morality.

Let's not pass the blame to others. We are all guilty, individually and collectively, king or no king. The rediculous stress on religious ceremonial in today's world, the *mundans,* the thread ceremonies, the marriage or mirage ceremonies performed by basically illiterate and lack-lustre priests who pester families until "death do us part". We surrender to his religious blackmail to remain socially acceptable, not morally ascendant.

I am no believer in "holy" books, in gods and goddesses. They represent the history of our people on this planet, their old belief and value systems.

(*Continued on page* 16)

Arrest religion

It's really time now to sit, think and act!

Interview with Prof. Yash Pal

Chief Editor : This depressing scenario—violence, communal clashes, the growing fondness for fundamentalism—seems to be dragging us to an abyss. How you see life as it is today?

Prof. Yash Pal : I think somehow instead of going forward we seem to be going backward. Any kind of difference which is seen in society is exploited by people. And a move towards fundamentalism is essentially an acquiescense to a mood of helplessness. We cannot handle problems, we cannot do much and so we go back and leave everything to fate and God. And different ways of leaving things to fate or God, which people have invented, tend to divide them because there is no rationalism in this. People gang together, they look alike, use the same language, read the same scriptures. It is not happening only here. In fact, in some version, one finds this all over the world. And, I believe, it is a terrible thing which is happening; and it is amazing that it is happening at this time when there is so much room to be free of it all.

C. E. : Why this wave of keeping and nurturing identities who you think are at the back of it—the educated among us or the religious leaders?

Prof. Yash Pal : I don't know why this wave of keeping and nurturing identities? There has always been an innate fear among people who are not alike! It is this tribal instinct which we continue nurturing, and, somehow, we have not been able to escape it. And, there are people, irrespective of whether they are educated or not, ever busy to exploit it. I do not think education as we have it today—ability to read and write, do arithmetic, or even learn science—is going to release us from that. I believe, the real remedy, as Nehru put it, seems to lie in our working to create scientific temper. And, that is quite separate from what we learn from our so-called education. True, religious leaders would exploit the situation because they lead the gang and it only helps them. Any kind of difference which exists among people, can be exploited these days. And that is exactly what is happening now.

C. E. : Don't you think religion too has its role in polluting life? In fact, it is in our religion that we develop resistance to think and act rationally! Your comments, please.

Prof. Yash Pal : I am not a practising religious man, though I have nothing against. In fact, I respect a kind of religiosity—a sort of feeling which

Why live with nonsense

allows one to go beyond oneself and think of things, their causes, their relationships. That feeling is rather similar to the feeling one has even when one is engaged with science or with writing poetry. There are religious people, whom I respect, though I do not literally believe in all things they do. So, if there is a religiosity or a religion which a person practises for his own self, personally, not in an organised church, I have nothing against this and I would respect many people for this. But, when somebody says that this is my religion and gives me the right to interfere with your life and you shall do only this and that and nothing else, that I object to. And the way these religions are organised, that is precisely what they do. It is how religions indoctrinate and take away the basic right of a human being to be able to think and decide for himself. To that extent, I think, religion does create a lot of trouble.

C. E. : Again, religion yes, every religion, develops in us a false sense of pride and a host of prejudices which actively work to divide humanity! How you look at the Phenomenon ?

Prof. Yash Pal : Well, I agree that more than uniting, organised religions have divided humanity into many factions. And even within organised religions, there are sects which again set groups of people apart. Besides, we have found innumerable ways of separating ourselves from others. We just don't really look at the basic unity as such—the unity in our constitution, the way we go about; in fact the basic unity of all humans, all life, all matter, unity of humans with earth or planet or earth with the whole universe. This kind of feeling somehow is not incorporated. Of course, many religions do say about that but they say so in their own brand and unless you use those very words, the meaning itself is not supposed to be right.

I am not sure that if one takes away religion, and substitutes it for something else that it would not still be that bad. The bad thing about all this is man's inability to grow out of a feeling that anyone who is different, not like him, is an enemy. I really don't understand why we need to huddle together with people who are exactly like us to get warmth ! May be, because we don't recognise the likeness with everyone and, well, you may say, it comes from science; yes, it does. But just simple learning of science does not introduce this. I think to interpretation of this fact of science also one has to bring a certain degree of religiosity, not religion, religiosity to interpret that these things have meaning, they have ethical implications; it hasn't come about and it is time it came about. It is a tragedy that our learning and finding out of things, in science, for example, has been seen only in its application and not in its values which are implicit in this. It is, I think, not a scientific age; it is a technological age—we really don't appreciate the meaning of it all. I repeat it is not a scientific age. I wish it were to become so and we put more emphasis on that.

C. E. : And, again, it is our religions which fostes living in community cages and hamper growth of human mind. It is here in these cages that we build up and nourish strains and strasses which slowly but surely cause turmoil in our living. How you take it ?

Prof. Yash Pal : I think it is true that if one is confined to a few people, who read the same scriptures, who go through similar rituals and so on, one does get confined only to that and one thinks that is the only way of getting insides, or the only way of living, then, of course, one is confining oneself. But, of course, there is something biological in that. You can't find biology. The fact I may not say that Sanskrit Shlokas tell the whole truth; everything is true. And, on the other hand, since childhood learning this, the music of those Shlokas, the way they are said, has sort of imprinted itself in my memory bank. I resonate to that. I have no objection to humans enjoying these things as cultural things like other cultural things just as I enjoy some music and not the other. But I don't say that anybody who enjoys another type of music is a terrible man, I don't like him. So, one has to develop a feeling that alright I am what I am because of the experience I have gone through as a child but then other person is what he is because of experience he has gone through and there is nothing that divides us, as both of us have gone through the same process. The process is the same and that sameness we must identify, not because we just look different or speak different things or read different scriptures or read no scripture. I frankly don't know why this happens. I don't know why this animosity appears in us humans. We, probably, don't yet understand that. But it is true that more than the sameness it is the differences which are emphasised in newspapers, radio and TV, in our conversations, in our private and public gatherings. Thus, we provide more occasions to people to find excuses for designating some people as being enemies and others being friends. Needlessly, because there nothing really is involved.

C. E. : Now, how to get out of this distressing situation ? Why not we say good-bye to our old ways and actively start working to cultivate rationality and humanism as a living state policy ? Your comments !

Prof. Yash Pal : Well I think, if the state says this is the policy it may become a state religion which would be equally constraining and indoctrinating. But, yes, why don't we do that ? Why aren't we reasonable; why aren't we more human towards each other; why do we allow these small differences which were introduced rather short time ago ? No religion is more than 5000 years old, as far as I know. Humanity is millions of years old. So, it is a very tiny part of human history; many religions are still younger and many more varieties have come even very recently.

I think with this kind of atmosphere, with all this cultural baggage, which we carry, and we should carry this part of human culture, what has happened to humanity, I often wonder ! I feel that time has come now to sit and think and act on the basis of 'here and now' and if we do that, it would be really picking up a responsibility which most people are unwilling to take on; they are not even ready to think. They would like some precedent; how do all this ! So, what we are asking for is something not trivial; we ask people not to behave on the basis of precedents; every time one has to do something one has to think afresh and that is rather difficult because we need some reflects .

What one has to do is to find some method by which such way of working is not considered so passionately to be true that we consider everything else as false. The challenge is to say, all right, this is one of the ways which has been given a behaving ; there are other ways of behaving which have been given to others; and that there is validity in both. But, not a linear validity one could jump from one to the other or one could not use any of those ways if one can their afresh that there is no absolute necessity and one must follow one of these precedents. It is a difficult thing to introduce in society.

Well, people need some ways of doing that. Unfortunately, these people mostly come through various brands of religions and creeds. How does one pick out the essence which exists, let us say, in various religions and one puts this essence in a set of values which are socially derivable, socially defendable ? Let humans stick to those values and recognise that these values are not permanent; they will change on the basis of social transactions as we go along. So, what is demanded of humanity is to move from a state of semi-static living to a dynamic living. And this is a big challenge. I have a feeling that dynamic living is demanded these days as a necessity for existence itself. We have got to a stage where things change very fast; we multiply so fast; knowledge increases at a rate faster than people die; the time constant for change in concepts and knowledge has become shorter, much shorter, than the human life time. There is, therefore, just no better alternative possible than to live dynamically.

Now, this is something which is not realised, not even by the great world leaders at the moment ! And so, if one moves in that direction, one may face an atmosphere of confusion. One does get confused if one cannot anchor oneself onto one of these trends which has come to us from so far away. But even that means, I think, there would be more meaning; there will be less divisiveness. But it is a hard thing to achieve. One cannot just say that from tomorrow this won't happen; even such saying will become aonther doctrine and in that doctrine one will probably be again lost for long time. I think we should avoid making too many doctrines of this sort. Time is for a real freedom, total freedom, and that is what one has to work for. I think just to say, 'be rational' in itself does not mean much; we have to be free, totally free.

C. E. : There seems to be something radically wrong with the way we impart education! Or else, how come that our educated not only nourish but also lead this cage life. Your views, please!

Prof. Yash Pal : There is a great deal wrong with education Not much of it is intended; some through negligence, but a lot again because of the fact that education is a system. We always talk of educational system. And everybody knows that the inertia of educational system is long, is certainly longer than the life time. What I was saying earlier again applies that the time it takes to even change in simple curriculum is longer than the period somebody spends in school.

So, educational system is because it is a system, it is a massive system, it is a very inertial system, and therefore, it largely tends to be a very traditional system. It tends to be so unless one is very careful; a system which homogenises, which wants to find specific mores, or specific definitions of what an educated person is supposed to be. And as soon as one begins to have those definitions, very straight-jacketed requirements, one already begins to take something away from education. So it is true that we are because of the education which we have received not only from formal schooling but through our interaction, with living with other people, with daily transactions—that is all education.

So, sum total of what we learn from the outside world is much more than the sum total of what we learn in school, and this is as far as behavioural patterns are concerned. And that is all a part of the educational system. Say, it becomes a bit of a Chicken-and-egg problem. Do you change the whole society which moulds me first through its educational influence on me, or do I change me first so that society can change. So it is an interactive system and I

don't think one can put one or the other first. As people begin to change, the society changes, the educational system changes and the people change more and more. So you cannot say this is one element and individual is another element. It is a mix system, it is self-consistent system; and we have to work on all the aspects rather than say 'I will change the curriculum of my school' and suddenly it will begin to change.

But it is true, as it is implied here, that the normal education system does not necessarily liberate people. That more educated people are not necessarily more liberal. They are not necessarily more understanding. They could be more understanding but they are not so ! And that whether it is fundamentalism or all kinds of obscurantism or leading a very divided life—one is very scientific and logical when one is working in one's factory or on one's machines or on one's experiments, but when one is living and dealing with people and all kinds of other things, one is given either to that kind of habit or terrible chauvinism about who you are and what you are So it is a kind of a system where there is lack of integral living. It is a fragmented part and in this fragmentation when special passions come, a part of one is taken and the rest is left out. And that is the part which goes and burns up a bus or kills somebody or madly shouts slogans

And, so, it is not a question of just changing an institution; its working towards this totality. You will say, how do you do this ? I don't have all the answers; but I have a feeling that even the problems are not posed properly We are told, "be nice, be good, read this scripture, read that book, holy book, you will be fine". Which holy book ! Shall I read them all, I will be fine; fine, I am prepared to read them all or everything else and imbibe what I want to and read every thing . But, no, description is given and once you begin to give prescriptions of good and bad education of this sort, I think one again gets into a mess.

C. E. : As we see, the reach of electronic media has made tremendous inroads into our life. We now do have the necessary infrastructure. What steps you would suggest to turn the tide ?

Prof. Yash Pal : I think the media the way we have it at the moment, for example, broadcasting: if the media remain essentially broadcast type media, where very few people can broadcast to many, which is the nature of broadcasting, it is possible that one may accidentally hit upon a curriculum of broadcasting which would be, by its very nature, free or ennobling or also enabling type of curriculum. But the chances are, more often than not, that you don't. So, one will then try to make sure that we keep all the elements of the society happy. There would be a tendency to take even prejudices of various segments of society to give them equal chance. And one should, it's a broadcast medium. And, I think, it is not necessary, that is something which by itself will do something nice for one.

I think we have to go towards a medium slowly, where there is more access, where people are not only talked back but they can talk; there is more interaction, there is more possibility of discovering the commonalities between people who appear to be different; and it is only through this transactional mixing of people, who are even separated by large distances, that we can begin to understand and appreciate. I have just seen people far away dancing, doing something—doesn't automatically lead to an entity. It might. It is better than having nothing. It is good for me to be able to see people of Nagaland and people of Tamil Nadu and so on, which is done. It is better than nothing. To that extent it is good. But to be able to interact somehow, and to give that particular configuration to the medium, is a challenge, which we have to bring about slowly and once we do that, hopefully, the distance not only in terms of geography but distance in terms of feelings and experiences, which really divide people, that distance would begin to melt away.

This is only a hope; it does not necessarily happen. Because even when we talk of a distance we always choose a particular subject and we don't touch the sensitive aspects. One talks of one human-family and so on, and that why should it become one human-family now that the interaction can be so close that everybody can talk to each other, everybody can see each other, and everybody can influence each other. It is not happening because we talk to each other and influence each other only in some specific things which we think are respectable. On business, we don't touch each other or influence each other and things which are supposed to be useless—things which are supposed to be nothing; we can't touch each other, we can't just exchange anything with each other. We can't laugh together.

But, if we can have a medium where this becomes possible amongst people, maybe we can get to a situation we can break all these barriers, put down

artificially, and begin to realise that truly, not only in terms of slogans, truly, we are one, we are similar; we cry at the same thing, we laugh at the same thing, we hurt the same way and really we begin to appreciate it in our homes. Now, while one says it all, of course, one is also aware of the fact that maybe we will not completely get there. Because there is a limitation. Love is a feeling when divided amongst too many, becomes very superficial Now, there is a superficial torrent which has a different quality; that is why in a family some people you love more than the others and so on. But to convert this feeling such that when if I love somebody more, it does not mean that somebody else is loveless, but I should not hate, shouldn't go to the other side of the barrier. So, may be human limitation or biological limitation is that some will be more exclusive, and, I should allow the freedom to be good, to be able to choose, to be friends with those they want to be real friends with. But all people don't get along quite that much and this freedom and this pleasure should be available to an humans. But, to go to the other extent, that I am if not friends with somebody then I am his enemy—this is something which one has to somehow get away from.

C. E. : This most effective media to reach masses is under Government Control. Don't you think the Government needs bidding farewell to its traditional ways of selling religions through the media and instead actively take to promoting humanism and rationality ?

Prof. Yash Pal : Well, I don't know which medium is the most effective and is under Government control. We talk a great deal about radio and television being the most effective media—probably is, probably isn't. The word of mouth, what happens in the market place, what happens in various places where people get together, including religious places—all has a tremendous influence. So it must be true though it is fashionable to say that the most effective medium is under control at the moment and certainly the press is not under Government control But all the same what the media do is, of course, as I said earlier, that in order to appear to be equal and tolerant towards everybody, they essentially give equal time to all types of chauvinism; to all types of obscurantism and also to all types of good thoughts whichever they can. If they work well, they try to do that.

Now, you may say, well, something ought to be banned. Something should not be allowed because they are obscurantist, because they take us back and they are not rational. In principle, I am with this, except that there is the problem how to define this. And if somebody sits to define this then we may have run into some kind of problem. I fully agree that one has to promote humanism and rationality and surely there is no other better way for humanity to exist. But to get completely paranoiac about mention of the tremendous movements, which have gone on in the world, which have moved whole of humanity, would also be wrong. But the question is how do you refer to them ? If you refer to them as a cultural growing up of all of humanity whichever religion it is, thoughts there are, the books there are, beautiful things which have been said in various places I should take them also without fear, without any specific discrimination between one or the other.

Then it is fine—this is just as like Bach's music, hundreds of years ago, I may also like something which somebody else has said and whether I like or dislike is irrelevant, this has been said and for me to know the past which humanity has gone through is an essential thing Like archaeology, there are many riches there So, it has to be an exposure to things of past Whether it is religion or so on, it is not necessarily bad that they happened. But to say today this is the correct line, and this alone is the correct line and nothing else is there, for a moment it is this, for a moment it is this—others switch off now I am talking to this community, and now you switch off, I am talking to this community—that is what really does not help because that really emphasizes all brands of obscurantism. The others switch off anyway. These are the only people who listen So we have to create this mix rather than give one brand of truth and another brand of truth, another brand of truth and all the brands of truth separately

And, also, we have to get away from this habit that in order to talk of any values or modes of behaviour, we necessarily have to refer to some quotation from some religious book As if we cannot derive those truths; as if they are not self-evident. Love human beings, love your fellowmen—I don't have to get it from anywhere—it is good that they said it I respect them for having already discovered it so long ago But living today, I know there is no other way for us. So, that is important and I don't have to seek authority To sum up, creation of a society which thrives on humanism and promotes rationality I think, is a very challenging job and the Government media, I think, has a significant role in this endeavour.

Yes, act we must, but shall we !

Hiren Mukerjee

'WHY LIVE WITH NONSENSE?' IS YOJANA'S QUERY IN ORDER TO ELICIT ANSWERS PRESUMED TO HELP AN "EXERCISE" ON THE PROMOTION OF 'HUMANISM' IN OUR COUNTRY, THIS SIMPLE YET ELEVATED TERM HAS FUNDAMENTAL DIMENSIONS IN RELATION TO THOUGHT AND ACTION EVEN AS IT CARRIES, NECESSARILY IN A CHANGING HISTORICAL PROCESS. A SOMEWHAT VARIED CONNOTATION. IN INDIA TODAY, WITH 'KHALISTAN' AND OTHER DISRUPTIVE AND DEGRADING COMMUNITARIAN KNAVERIES CLOUDING THE SCENE THE DANGERS OF A DISMAL DISARRY CONFRONTING WHATEVER NATIONAL INTEGRATION WE HAVE BEEN ABLE TO MUSTER, THE SEARCH FOR 'HUMANISM, IN THE BASIC SENSE, IS A CATEGORICAL IMPERATIVE.

ONE MIGHT FEEL A KIND OF ALLERGY TOWARDS A WIDELY CURRENT JOURNALISTIC VOGUE FOR SENSATIONALISING ISSUES (AT LEAST VERBALLY) AND POSING PROBLEMS IN PURPOSEFULLY PROVOCATIVE PHRASEOLOGY, ONE MIGHT WELL HAVE NO ILLUSIONS ABOUT OUR 'INTELLIGENTSIA' A DOUBTFUL BREED, GENERALLY TRIVIAL AND SELF-ENCLOSED, TOO FROG-IN-THE-WELL INDEED FOR ACIVE CIVIL VIRTUE, ONE MIGHT BE AWARE ALSO THAT EXPOSTULATIONS, HOWEVER EARNEST AND ELOQUENT ARE TOO OFTEN WORSE THAN USELESS—DID-NOT INDIA'S ANCIENT WISDOM TEACH US THAT "THE SOUL IS NOT ATTAINABLE THROUGH EXHORTATIONS" ("NAYAMATMA PRAVACHANENA LABHYAH")? EVEN SO, IT IS GOOD THAT YOJANA SEEKS, SOLEMNLY BUT I FANCY ALSO WITH A SMILE IN ITS SLEEVES, TO PROD OUR PITIFUL 'LITERATE' IN THE RIBS: "WHY LIVE WITH NONSENSE?"

THIS WORD, 'NONSENSE'—is a reminder of what in a great speech on 'Swadeshi' in Madras (February 14, 1916), the then only tentatively hailed 'Mahatma' Gandhi said in his own unique way: "... Well, India is a country of nonsense. It is nonsensical to parch one's throat with thirst when a kindly Musalman is ready to offer pure water to drink. And yet thousands of Hindus would rather die of thirst than drink water from a Muslim household. These nonsensical men can also, once convinced that their religion demands that they should wear garments manufactured in India only and eat food only grown in India, decline to wear any other clothing or eat any other food". This was then altogether a new voice in India's public life, the voice of a man who had risen, as it were, from India's very earth, a man who said queer, contradictory, impossible things and yet with an urgency and compulsion of conviction and a sure sense of sharing the common life of his people that had never been encountered before.

In his best days as India's pre-eminent leader, Gandhi "played with fire" (his own words) and perhaps inevitably for his time, introduced religion into politics, but of course with his own motivations and expectations that were at their best sublime but proved too often self-defeating.

DIDN'T THE GREAT MAN DISCOVER HIMSELF ABYSMALLY FRUSTRATED—"forsaken by God and man"—unable to share rejoicings when freedom came to a partitioned India (August 15, 1947), a limping, truncated freedom no doubt but freedom nevertheless ? The world's most cunning imperialism had extorted from us the wages of our own political failure (not Gandhi's or the Congress' alone) which was the death of cherished hopes of the unity of our emerald land from the Himalayas to the sea. Gandhi's crowning contribution to India's struggle was however, the certitude which he wished to prove in

practice that the millions of our people had to be moved into action if there was to be basic change. The quest today for 'humanism', involving a concerted effort to sweep off cobwebs in our mind consecrated by convention and by custom, cannot be the achievement of seminars and symposia and of elitist enlightment, but only of a movement of the masses awake to the logic of real life.

Let there be no contentment, therefore, with *obiter dicta* from the supposedly superior heights of intellectualism that religion, for example, should be "put in its place", that 'secular' politics should prevail in public life, that perhaps today we could just "arrest religion and see to it that it remains confined to homes and places of worship alone". This of course, is a welcome idea, but unfortunately forgetful of the immensity and complexity of our predicament, of tasks that are a challenge, urgent and onerous, to what Karl Marx had once called "the tradition of all the generations."

PERHAPS THE FOREMOST OF GANDHI'S MODERNISING' DISCIPLES, JAWAHARLAL NEHRU—saw in the mid-twenties that the peril for India was not so much from 'communism' as from a word with only a little syllable added to it, namely "communalism". In a letter to a friend in 1927 he was driven once to burst out : "I have no patience left with the legitimate and illegitimate offspring of religion". When Hindu-Muslim unity on the basis of moral persuasion and without the impetus of mass movements touching the lives of our people proved fragile, and predominantly upper-class constitutional activity was felt utterly inadequate if not altogether banal, Gandhi was once found, in an exceptional (shall one say lucid?) moment, writing to Jawaharlal (April 1, 1928) : "I am quite of your opinion that we have to have a movement without the rich and without the vocal educated class, but the time for it is not yet". In spite of a constant readiness for militancy in pursuance of tasks he thought fit for the advance of our masses, Gandhi had philosophical presuppositions that made him chary of what in the late 'thirties he once excoriated as "revolution and red ruin". That, however, is another story.

Jawaharlal's father, Motilal, by no means a radical but often forthright in his perceptions, appeared to have seen something of the heart of the matter when, *a propos* of Hindu-Muslim unity, he wrote to his colleague M. A. Ansari (Feb. 17, 1930) that it could not be achieved by preaching its virtues : "We have to bring it about in a manner which will accomplish it without either Hindus or Muslims realizing they are working for unity—this can only be done on an economic basis and in the course of the fight for freedom from the usurper". It has been this idea, though the comprehension of it was limited and fitful and never conveyed, except by minority movements, to the masses of our people in anything like adequate measure, that enabled India, after Independence, to avoid the path chosen by Pakistan and declare herself a secular state where the people, irrespective of religions they professed (or for that matter total disbelief in religion) have equal rights of citizenship.

THIS WAS A GOOD STEP BUT IT DID NOT GO FAR ENOUGH ON ACCOUNT OF THE PULLS OF OUR PAST—the backlog of millennia and nearly two centuries of imperialist subjugation, the plight of whose subtle moral debilitation we do not yet seem ready to shake off. "How primitive that a state should be founded on religion!", was Stalin's observation in one of his interviews with our ambassador, K.P.S. Menon, when the subject of Pakistan was mooted. Varieties of obscurantism and revivalist and other anachronisms still keep us, however, far from people-oriented, rational and objective fulfilment of freedom.

"We will not tolerate any communalism", said Jawaharlal soon after Independence, "and we are building a free, secular state where every religion and belief has full freedom and equal honour". This was not an adequate definition of secularism but it was good enough to get on with. Jawaharlal could at least put his foot down when President Rajendra Prasad's narrow ritualism objected to January 26, 1952 (on astrological grounds !) as the date of the Republic's inauguration. He frowned on such things as publicised (not purely private) presidential visits to the Somnath temple and Kumbh Mela. His daughter, Indira helped, unfortunately, to dilute secularism by too many press-featured visits to places of worship and to 'holy' men and women,though mercifully not of one religion, but of all. The present incumbent in Rashtrapati Bhawan has demonstratively made obeisance to dubious *sants*, and entirely impermissibly for the Supreme Commander of the Armed Forces, submitted to priestly reprimand for unavoidable military action toflush out frenzied terrorists foregathered in the Golden Temple. There has been, if anything, a slide down in so far as India's secularism is concerned—a portent of peril to our body politic.

THUS FEW PEOPLE IN HIGH PLACES CAN CAST A STONE TODAY at N. T. Rama Rao for instance, flaunting saffron robes, riding Chaitanya *rathams* and having devoted (or demented?) followers washing his feet in coconut water and (as openly reported) drinking the stuff ! How one recalls Rabindranath Tagore's remonstrance to Gandhi in 1921 that capitalisation of cheap credulity was demeaning and evil—"I would refuse a heaven", said Tagore, "that could be reached worshipping a Guru's feet !". One can understand the primitive worship of serpents and of trees, but it is not possible to forgive what is nearly rampant in India's educated circles—esteem for 'spiritual sorcerers' and reason bereft weakness for such things as astrology and other mumbo-jumbo.

If mischief-mongers—whom India's neo-imperialist ill-wishers intent on dividends from our country's destablisation, back in open and veiled ways—find scope for evilries running even to dastardly treason, there should be little reason for surprise.

A Bombay High Court decision differentiated religious belief and religious practice, the former being what the State is pledged to protect (the State should also protect unbelief, atheism etc.) while the latter has to be tested in terms of public interest. However, the horrid Hindu practice of 'untouchability'—how the orthodox counters South Africa's apartheid is a mystery—continues in spite of legislation "abolishing" it. Even the hideous practice of *Sati* surfaces from time to time. Holy furore breaks out over such oddities as the late Vinoba Bhave's campaign for a ban on cow-slaughter though Gandhi himself had averred that the prohibition was "for the Hindus, not for the world", and must come only "from within".

PUBLIC EXHIBITION OF RELIGIOSITY ARE EVEN NOW THE HANDY EXCUSE FOR VIOLENCE AND BRUTALITY.—Who cares for Sarojini Naidu's invocation of a God, "alike in whose ears sound temple bells and the call of the Muezzin ?" Who remembers Congress President Muhammand Ali's once famous lament (coconada 1923) : "If *azans* and *peepul* trees and noisy processions are our horizons', utter sum', then let us ringdown—this force is nothing worth"? Instead, there happen such enormities as Bhiwandi, Ahmedabad, Moradabad, Bihar Sharif and elsewhere, and invoking not only the historic Shivaji but 'Shiva' himself, odious outfits like Shiv Sena go often on rampage even in supposedly sophisticated places. At the moment, over the issue of reservation for cruelly deprived and retarded sections of our people, there goes on pernicious depredations in the name of the paramountcy of merit (the monopoly, nearly, for historic reasons, of the comparatively comfortable) with no thought of social justice so long denied to so many of our people.

Can it be any wonder that the spurious *sants* of Sikh fundamentalism, akin in some ways to Khomeini's Shia priestocracy in Iran (though without their redeeming anti-imperialist ardour) find the climate congenial for blessing, in effect, though not always openly in their devious declamation, the terrible treason that is the campaign for Khalistan—a blow not only to the body but even more to the soul of our India ?

Something like an atrophy of conscience has gone so far that even a foul act of treachery and cowardice—the felling down of Indira Gandhi in her own backyard by her own bodyguard firing from the closest range—has come to be openly applauded, with moderate' Akali leaders publicly accolading her killers as martyrs of their 'faith'. For various reasons restraint even in condemnation is called for, religious incendiarism having raised tension to a fever heat. But words fail to stigmatise such filth. What a tremendous pity that superstitious, ritualistic, chauvinistic and other concomitants of religious faith, far from being overcome, still proliferate and mask infamies we should have outlived !

SOMEONE ONCE SAID THAT FROM YAJNAVALKYA TO VIVEKANANDA WE HAVE HAD AN UNWHOLESOME SURFEIT OF INSPIRATION.—It still seems easy to brag of our 'spiritualism', forgetting that it has been little more than a mantle of myth in which to keep ourselves warm against the cold blasts of misery and humiliation. Our elite, intellectually indigent and spiritually sluggish, do not hesitate to grovel before new-fangled 'godmen' (far different from Ramakrishna or Ramana Maharishi) who are found twenty to a dozen in our haunts of power and pelf. Our 'craze for phoren' lends respectability to slovenly, perhaps even sinster and fundamentally unspiritual foreign seekers of hashis (and whatever else) in Goa and Varanasi as the open sesame to heaven. One can respect the simple faith of our people who flock to Kashi and Prayag, but not the crudities seen in certain circles. If, of course, you are in the comfortable categories of life you will see the point in Byron's lines: "There is naught, no doubt|So much the spirit calms|As rum, and true religion". And the ruling classes always know the truth of Gibbon's finding "The various modes of worship which prevailed in the Roman Empire were all considered by the people as equally true, by the philosophers as equally false, and by the magistrates as equally useful."

RELIGION HAS SERVED WELL AS THE CEMENT OF SOCIETY? THE PROP OF THE POWERS THAT BE, THE GUARANTOR OF THE STATUS QUO.—God is good and if one fails to understand why too ofen the wicked prosper and the good suffer—well, one must remember that His ways are mysterious! "Where riches accumulated, they could be regarded as the blessing of God ; where they were absent, their unimportance for eternal happiness could be emphasised. With ponderous pronouncements like Jiva being Shiva, with shlokas affirming equality and the right of all to the highest summits (Tattvamasi etc.) this country retains a cruel stratification, unchangeable except by re-birth into a better "station in life"—the law of *Karma* laying down that a less misrable life hereafter could only be achieved by pious performance of all social obligations however pitiful and degrading. All religions more or less, offer such 'compensation' to the lowly, but Hinduism sytematises it to perfection so that not only caste but even 'untouchability' threatens to remain in perpetuity.

Mother Teresa (blessed be her name!) praises God for having made the poor and the afflicted whom, in the goodness of her great heart, she succours so splendidly. Gandhi gives vent to his compassion by

calling 'untouchables' "Harijans" and invoking 'Daridranarayan', all the time hoping that the pious, in the privileged strata, would try to win virtue by the circumspect practice of commiseration. Even the finest spirits thus remain allergic to the quest for the root cause of poverty that pollutes everything and for its basic remedies. Little wonder that Karl Marx, in his prophetic indignation, anathematised "the charity-mongering acrobatics of bourgeois philanthropy".

REMEDIES FOR DEEP-ROOTED AILMENTS CANNOT BE SERVED IN CAPSULES—Growingly, however, there is agreement among the thoughtful that "the consolations of religion" would be superfluous in conditions of real social and economic well-being. During the nineteenth century Germany wanted to "prohibit" religion (Albania is the one country that has sought legally to do it.) Marxism totally denounces the "stupid gamble" of a "political war" on religion, and the experience of socialist countries prove the wisdom of co-existence in the service of men.

Who does not know of Marx having spoken of religion as "the opium of the people", but few know of his description of it at the same time as "the genera ised theory of the world, its encyclopaedic compen its logic in a popular form". None can deny—lea of all communists who base their belief on history- how much music and architecture and literature ar the grace and creativity of man's life find out throug the ages in religious shapes, a vast wealth of inspir tion for harmony and happiness and the endless pote tialities of human endeavour. The emergence of e ploitation, the reign of avarice in the long annals society, the sinister sophistication of centred act vity account for the crimes that have sullied history pages in the name of religion, and in our India predicament threaten to darken and degrade our ve being.

Not by textbook teaching and socio-political se mons, however but the consciously mobilised politic will can we see the role of religion in a period of ine capable change and eal effectively with what Jawaha lal in 1927 called "the legitimate and illegima offspring of religion" that causes acute nation anxiety. □

(*Continued from page 7*)

Yes, even magic and mystery. Religion as passed down to us is only the symbol of the survival of fear and insecurity, and a continuing effort to discipline ourselves from our terrible frailties and weakness. I do not need these terrible meaningless props Surely millions feel like I do.

THEN, WHY DO THEY NOT EXPRESS THEMSELVES? And why is the secular State so involved in matters that should be part of a personal domain? Isn't it like pushing a special type of narcotic? And are not our people made captive in so many dangerous ways? What happens when the narcotic takes over, becomes uncontrollable and spawns millions of crazies who take crazy vows before their imaginary gods and goddesses, or their "holy" books?

IF I WERE KING I WOULD MAKE IT MANDATORY to confine religion to the privacy of the home and to places of worship. No public religious ceremonies for public figures, over-publicised by the media. No music or songs in public ceremonials to heighten the so-called spiritual impact, sublimal or otherwise. No religious processions or parades. The potential range of reform is wide for a secular society.

I would put the creative designers to work to evolve public ceremonial—and even private, if it is needed—which would marry the aesthetics of the past with the rapidly changing present, and the outlines of the future. This is vital to every area of life, or we would still be dragging ourselves through the delusions of a medieval age. Why do we punctua our life with these medieval delusions every time v assert our Indianness? It is thoroughly stupid an unthinking.

If I were king, it would become my major co cern to put the whole paraphernalia of hypocritic religiosity and its deplorable penetration at eve level of public life under wide and deep scrutiny. would encourage a free and ferocious debate on tl depravities, duplicities and dangers embedded in tl present day practice of all our religious—and tl suspect public posturing of the State.

SOMEWHERE ALONG THE LINE, TH MIND OF INDIA would break out of th shackles that hold it captive, a mind that once pi neered profound philosophical cogitation on the plac of the human being within the cosmos, of the force that determine his over-riding sovereignty as an i dividual who is part of a collective, and of the co cepts which preserved a remarkable mental balanc to receive new enlightenment and to fertilise. Th Hindus were once such a people, not a religion or community.

But, alas, where are the netas who would comm to this truth from the public pulpits? Here res our tragedy. We have to triumph over it to launc upon a renaissance rooted in the solid achievemen of this century, and in those which are projected fc the next. If we do not stir we will remain the wre ched camp followers of political racketeers, the lo and the damned. And, I, will still be dreaming o being king. □

Arrest religion

Godless gods and inhuman humans!

Justice V. R. Krishna Iyer

This religion, and the dangerous bigots it breeds, its cultist leadership, its mafia fuelists and its fanatic followers, cautions Justice Iyer, have now taken over operation fragmentation and are out to subvert national unity. It is time now to act, says he, and adds, even if secularism does not swing to the extreme of freedom from all religions, it is functional only if the State, save to enforce social morals, public hygiene, Humanist standards, public peace and the criminal law, shall keep away from all religions.

WHEN A NATION BLOSSOMS INTO FREEDOM it assumes responsibilities. The obligation to preserve and defend the living values of secularism, socialism and to inflict developmental defeat on the pervasive socio-economic backwardness are the categorical imperatives of Indian Independence. If religions in their chauvinistic totalitarianism, intoxicate their followers, thro' divine commands into the fanatic faith that their Gods alone deserve worship and other Gods than their own are dogs to be destroyed, the cannibalic consequence is bound to be holy intolerance, divine civil war and break-up of the Republic India.

What with its religious plurality, populous pantheon, historical hatreds, Bharat is pathologically vulnerable to violent godism and pro-

Why live with nonsense

vocative communalism. The glorious instances of religious fellowship and of shrines which are paradigms of common worship and reverence are a culture alive in many places and, may be the great hope of a joint spiritual heritage, is bovinely neglected. Indeed, if only religious liberation, ecumenical progressivism and movements like liberation theology in every camp had been activised with political sensitivity and humanist sincerity, (as the Russians, now do by promoting World Peace through leaders of all religions) India would not have been

"Religion is a terrible satan in its decadent status when people, plunged in spiritual illiteracy, miss the divine essence of the lessons of the sages, prophets and seers and kiss the holy nonsense of My Religion, Right or Wrong and my religionists alone to me belong."

the terrestrial bleeding and breeding ground of celestial duellists.

all that religion breeds!

Fundamentalists in every religion breed dangerous bigots in large numbers and the major religions like Hinduism, Islam and Crosstianity (Bernard Shaw uses this word as contrasted with Christianity to denote church-going piety on Sunday an danti-Christ impiety on other days) have not only many bewildering, even blood-thirsty sub-divisions but seek to regulate temporal affairs and ritualise wordly practices which are totalitarian in their dogmatic prescriptions and proscriptions going beyond the higher domain of communion between Man and the Cosmic Power Process. What you eat or should not, how you dress or should not, how you may marry or may not, how you grow your hair or shave off—these and a thousand other material things are directed by the inviolable authority of Religion. Many of these concerns are important for the members of any society but must be governed by social, secular and scientific considerations, not sacerdotal mandates. And when there are several monopolistic religions which have their do's and dont's running, sometimes, contrariwise, communal feuds inevitably erupt leading to bloodbaths and machabre martydem. Even when temples and gurudwaras, mosques and churches manage to live in peaceful coexistence, other syndromes of group hatred and communal partisanship mar the homogeneity and health of the society.

the mafia fuelist !

National unity and patriotic progress are subverted by caste and communal thought and action which claim first charge on one's duties and supernatural finality and paramountcy. Cultist leaderships, mafia fuelists and fanatic followers take over Operation Fragmentation and the victims of Gods at war are the weakest and the lowliest. Human rights are drowned in blood on a massive scale and exploitation of man by man, is sanctioned by usurpation of secularism and socialism and intolerant suppression of democracy by respective religions. Nehru, as an exasperated Prime Minister, observed

> "Grownups have a strange way of putting themselves in compartments and groups. They build up barriers . . . of religion, of caste, of colour, of party, of nation, of province, of language, of custom and of wealth and poverty. Thus they live in prisons of their own making."
>
> (Jawaharlal Nehru. India News, quoted Gazette and Daily, York, Pa. Feb. 10 '58)

> "The spectacle of what is called, religion, or at any rate organized religion, in India and elsewhere, has filled us with horror, and I have frequently condemned it and wished to make a clean sweep of it."
>
> (Jawaharlal Nehru : Cardiff, What Great Men Think of Religion)

Religion is a terrible satan in its decadent status when people, plunged in spiritual illiteracy, miss the divine essence of the lessons of the sages, prophets and seers and kiss the holy nonsense of My Religion Right or Wrong and my religionists alone to me belong. In this vulgar, barbarous degeneracy, humanism dies and values of tolerance, compassion and deeper nationalism perish because religious brutalism takes the sword or the sten-gun and brother kills brother in the name of God In this perverse reversal of higher meanings, gods defeat God and Man on earth becomes the blind ammunition of divine rivals in the skies.

and a trinity of disease !

If the price of religionism is the sacrifice of human decencies, of secular sanity, of socialist polity and spiritual democracy, we must be saved from this

"If the price of religionism is the sacrifice of human decencies, of secular sanity, of socialist polity and spiritual democracy we must be saved from this pathology. The roots of this malady lie buried in a trinity of theological diseases pervasive superstitious, irrational supernasturalism and a fatalist surrender to sacerdotal sovereignty."

pathology. The roots of this malady lie buried in a trinity of theological diseases—pervasive supeistitions, irrational supernaturalism and a fatalist surrender to sacerdotal sovereignty. A last-refuge hope of relief and reward here and hereafter is the gravitational pull for most people. Piety and bigotry to purchase a good life in both the worlds is the crypto-commercial dimension of religion. When God thus establishes his empire over his believing subjects by playing on their credibility, moneyocracy—the Crown or the capitalist class—takes over God as its

mander-in-chief. Religion becomes usefully disruptive of the proletariat and ready with its forces to battle vicariously for survival of exploitative systems. And when passions are roused and weapons supplied, civil war-like scenarios emerge and escalate. Our secular, socialist aspirations are let down, our democratic-nationalist fabric is torn.

Our elections are communal belligerence. Our progress moves in reverse gear; our people become peoples; our single God multiplied into gory gods; our politics suffers the polution of casteism communalism, our patrotism develops extra-territorial loyalties. If this traumatic trend, in myriad forms, is not arrested now the ship of State will sink from its own shells

the thinkers' diagnosis

The relevance of Gandhiji, exaggeratedly misunderstood as a medievalist, is that for him all religions are together a brotherhood, a vision of unity in diversity. The relevance of Nehru is that humanism, in his emphasis, is the soul of religion and the truly religious soul is not an obscurantist ritualist but a selfless universalist. He quotes Romain Rolland in his autobiography:

'Many souls who are or who believe they are free from all religious belief, but who in reality live immersed in a state of super-rational consciousness, which they term Socialism, Communalism, Humanitarianism, Nationalism and even Rationalism. It is the quality of thought and not its object which determines its sources and allows us to decide whether or not it emanates from religion. If it runs fearlessly towards the search for truth at all costs with single minded sincerity prepared for any sacrifice, I should call it religious' for it presupposes faith in an end

... last-refuge hope of relief and reward here and hereafter is the gravitational pull for most people. Piety and bigotry to purchase a good life in both the worlds is the crypto-commercial dimension of religion. When God thus establishes his empire over his believing subjects by playing on their credibility, Monecracy—the Crown or the capitalist class—takes over God as its commander-in-chief"

to human effort higher than the life of existing society and even higher than the life of humanity as a whole. Scepticism itself, when it proceeds from vigorous natures true to the core, when it is an expression of strength and not of weakness, joins in the march of the Grand Army of the religious Soul."

He adds:

"I cannot presume to fulfil the conditions laid down by Romain Rolland, but on these terms I am prepared to be a humble camp-follower of the Grand Army."

The oft quoted passage from Marx—often misinterpreted—has poignant meaning whether you be marxist or not:

"Religion is the sigh of the oppressed creature, the feeling of a heartless world, just as it is spirit of unspiritual conditions. It is the opium of the People."

(Karl Marx: Introduction, Critique of the Hegelian Philosophy of Right, Deutch-Franzoesische. Jahrbuecher, 1844).

"Religion becomes usefully disruptive of the proletariat and ready, with its forces, to battle vicariously for survival of exploitative systems. And when passions are roused and weapons supplied, civil war-like scenarios emerge and escalate."

'Marx's position is widely misunderstood...When the essay in question was written, opium was used in Europe almost exclusively for relieving pain. Marx was using the word 'opium' in this sense and not in the sense that religion is a stupefier deliberately administered to the people by agents of the ruling class."

[Weekly People (official organ, Socialist Labour Party), January 31, 1979].

The truth is that irrational addiction to any massive vice, enticing large numbers into moods of fatalism, antagonism, other-wordly absurdities and divisiveness weaken the democratic foundation, secular strength and socialist march of our Republic. Edgar Snow once said (about Russia and China of old):

'In Russia religion is the opium of the people; in China opium is the religion of the people."

Today, one might acidly add, in India that is Bharat, politics is the religion plus opium of the people. And our leaderships practise NKRUMAH's dictum:

"Seek ye first the political kingdom and all things shall be added unto you."

this homogenized humanism!

Our constitutional secularism sleeps as printed bombast and our national integration mocks as teasing illusion because our politics of godism makes

inced meat of homogenised humanism, socio-economic justice and spiritual-material synthesis. Today the Quran and the Bible, the Guru Granth Saheb and the Vedas are used to preach cut-throat politics and decree death sentence on our Republic's Founding Creed. We cannot survive unless we reverse this process and call the bluff of the gods. I am no negater of the Supreme Being or the indwelling divinity in each work of creation and am not opposed to religion as the manifestation of the divinity in everyone. In this sublime sense, religion and science are

Secular activism and socialist humanism must now wage a war for constitutional victory, to keep the wall of separation between matters social and secular, on the one hand, and affairs scriptural and sacerdotal, on the other. 'Render, therefore, unto Caesar the things which are Caesar's and unto God the things that are God's. Secularism is a constitutional fundamental."

pursuits of Truth, meet and mate and never contradict. Einstein's famous statement is valid:

"My religion consists of humble admiration of the illimitable superior spirit who reveals himself in the slight details we are able to perceive with our frail and feable minds. That deeply emotional conviction of the presence of a superior reasoning power, which is revealed in the incomprehensible universe, forms my idea of God."

(Albert Einstein: The World as I See It—Philosophical Library).

Walt Whitman's vedanta is Vivekananda in sublime verse:

"I believe a leaf of grass is no less than the journeywork of the stars,

And the pismire is equally perfect, and a grain of sand, and the egg of the wren,

And the tree-toad is a chef-d' yoeuva for the highest,

And the running blackberry would adorn the parlors of heaven,

And the narrowest hinge in my hand puts to scorn all machinery,

And the cow crunching with depress'd head surpasses any statue,

And a mouse is miracle enough to stagger sextillions of infidels."

Did not Vivekananda, who superbly synthesised materialism and the infinite presence of divine everywhere, condemn the cultist Hindu:

"Our religion is in the kitchen. Our God is the cooking pot, and our religion is : 'Don't touch me, I am holy'."

(Jawaharlal Nehru : The Discovery of India)

But the fanatilism, the communalism and the consequential policies and politics of hatred, distrust and carnage make it imperative that God must order all the gods back to the barracks and make material life safe for Men. 'An honest man is the noblest work of God' said Robert Burns: 'An honest God is the noblest work of man' asserted Robert Ingersoll.

and as we go about !

On the Indian earth (and elsewhere) honest man and honest god are endangered, if not extinct species Where is the minister, legislator or judge, or leader in public life who will have religion as a personal matter of conscience without infiltration into extra-personal thought and action ? Indeed, our High Bench slumped low in so misinterpreting the 'minorities clause' (Art. 30) that large numbers of common victims, teachers and students, parents and secular well-wishers, find themselves stultified by a constitutional treachery. For, the learned men in robes are alleged to have held that an exploiting business-man belonging, by birth or otherwise, to any denomination other than Hindu, investing money in a medical, technical or other college, may run his educational business with a high percentage of majority community pupils, collect capitation fee from teachers and students, appoint or dismiss, admit or remove, discriminatory fashion, or be a law unto himself in running the institution, drawing grants from the public exchequer and still enjoy blanket constitutional immunity from governmental direction or university correction on the score of the minority faith of the educational adventurist who invested his commercial talent in college-running enterprise. Even judicial elitism may, and occasionally does, play communal politics in India's pathological environment. And none so poor as to remember a verse from Rabindranath

"Even if secularism does not swing to the extreme of freedom from all religions, it is functional only if the State, save to enforce social morals, public hygiene, Humanist standards, public peace and the criminal law, shall keep away from all religions."

"Leave this chanting and singing and telling of beads! Whom dost thou worship in this lonely dark corner of a temple with doors all shut ? Open thine eyes and see thy God is not before thee !

He is there where the tiller is tilling the hard ground and where the pathmaker is breaking stones. He is with them in sun and in shower, and his garment is covered with

> dust. Put off thy holy mantle and even like him come down on the dusty soil !
>
> Come out of thy meditations and leave aside thy flowers and incense! What harm is there if thy clothes become tattered and stained ? Meet him and stand by him in toil and in sweat of thy brow."

time now to act !

Secular activism and socialist humanism must now wage a war for constitutional victory, to keep the wall of separation between matters social and secular, on the one hand, and affairs scriptural and sacerdotal, on the other. 'Render therefore unto Caesar the things that are Caesar's, and unto God the things that are God's' Secularism is a constitutional fundamental. Justice Hugo Biacks clarit yin Everson v. Board of Education enlivens the legal position :

> The "establishment of religion" clause of the First Amendment means at least this: Neither a state nor the Federal Government can set up a church. Neither can pass laws which aid one religion, aid all religions, or prefer one religion over another. Neither can force nor influence a person to go to or to remain away from church against his will or force him to profess a belief or disbelief in any religion."
>
> (Hugo L. Black Majority opinion, Everson v. Board of Education 330 US. 1 (1947).

Even if secularism does not swing to the extreme of freedom from all religions, it is functional only if the State, save to enforce social morals, public hygiene, Humanist standards, public peace and the criminal law shall keep away from all religions.

Just watch our Presidents and Vice Presidents, Prime Ministers and Chief Ministers, Chief Justices and lesser State dignitaries *using* the power, prestige, panoply and paraphernalia of office to scare devotees out and frighten deities into meek allegiance, visiting shrines, making state functions religious and mixing the politics of communalism with the rhetoric of secularism. Double-think and double-speak reach a new high in the life of our Republic. Of course, even laws play the sacred game by exempting wakfs from rent control laws and agrarian reforms and family laws of all religions, with gender injustice writ large, from the equality mandate of Art. 14. 'If the salt have lost its savour, wherewith shall it be salted'? (Bible: St. Mathew).

Religion and Law are in contra-constitutional embrace. We need talaq here.

why not new ban...!

From a nationalist perspective we must be ashamed that the Indian tryst with secular destiny of 'wiping every tear from every eye' is making headway steadily backwards in law and as much more in life. Why not ban at least election symbols with religious appeal, forbid political parties with communal labels from the hustings, plead with Gandhi-salesmen and Marx-merchants to avoid coalition with caste|religion oriented groups ? Can't we begin the battle for a secular political culture and public life? Can't we mass-vaccinate, through a big movement and people's mobilisation, every Indian against anti-secular disease? Blush, if you can, that pieces of a dead pig or slaughtered cow strategically placed in a wrong corner can throw our Republic into convulsive killings! Weep, if you can, that political ayatollahs threaten the Supreme Court for reading a secular code to defend destitute, divorces, with dousing them in kerosine to incinerate rather than maintain them! O Lord, How long, how long ? A hundred other simple things more to defeat religious corruption and moral insanitation are easy and necessary. But political cunning will fool us all. In a higher dimension than the author meant, I conclude with a quote from Victor Hugo: "I am for religion against religions." □

"Today the Quarn and the Bible, the Guru Granth Saheb and the Vedas are used to preach cut-throat politics and decree death sentece on our Republic's Founding Creed. We cannot survive unless we reverse this process and call the bluff of the gods."

Arrest religion

Religion breeds this nonsense!

Irfan Habib

This false official doctrine, invoked earlier by well-meaning reformers like Raja Ram Mohun Roy and Mahatma Gandhi, that all religions are true and, therefore, are ultimately **one** *leading to integration of people, argues Habib, is so unhistorical and so much against the texts and traditions of individual religions that it stands no chance of any success any time. And he adds, the way out for forging unity is to promote uncompromisingly humanism and rationalit .*

THERE SHOULD BE LITTLE DOUBT AMONG READERS of newspapers that the present moment is one when it is especially incumbent on us to consider the role of religion—and all that goes under its name—in our society today

One should perhaps begin with the realization that one cannot (and need not) abolish religion It exists and must continue to exist so long as there are inequities in society which individuals cannot hope to overcome, and so long, therefore, as they must seek solace spiritually. It remains, as Marx described it, "The sigh of the hard-pressed creature, the sentiment of a heartless world, the soul of soulless circumstance. It is the opium of the people" One may go further, and admit that even when social exploitation is removed religion will continue to have its votaries since unforeseen circumstances and the possibility of individual tragedies would still remain to guard against which people would be tempted to turn to faith and prayer.

If, then, there will be for a long, long time a basis for individuals' attachment to religion it does not mean

Why live with nonsense

hat its dominance over human mind would be equally trong. Indeed, one can understand little of the intellectual progress of man in modern times if one does not recognise that the area of dominance of religion n human affairs has been steadily shrinking. As Feurbach aptly said nearly a hundred and fifty years ago, 'Man has been abstracting more and more from God and attributing more and more to himself." Science has vastly reduced the extent of man's dependence on eligious texts for the knowledge of his past and en-

"The Arya Samaj has presented a seemingly pristine but actually unhistorical) version of Hinduism, eeking to make it a proselytising faith of practically he same type as the Semitic religion."

vironment. Darwin's theory of evolution, for example, has at one stroke reduced the scriptural narrations of the descent of man to mere myth.

new moral values !

The advance of science (and rationalism) has, however, gone further than merely reducing a larger number of devoutly held religious beliefs to the status of uperstition. It has also set up totally new moral values . the concept of economic and social equality, women's rights, the right to employment, welfare and medical care, the states obligation to promote and undertake development, and so on It is important to emember that these ideas originated and developed within the rational and scientific streams of thought: and it was only later that men of religion attempted a partial accommodation with them Take slavery, for example. Both Hinduism and Islam recognise slavery, and the protection of the master's right over the slave s part of the "personal law" in both religions The Christian powers of Spain and Portugal (and later England) established their empires on the basis of a flourishing slave trade. It was the followers of Rousseau, the "antichrists" of the French Revolution, who first proclaimed the equality of man and the abolition of slavery. It was only then that, in order not o leave the moral initiative to the French, that a hearing began to be given to the abolitionists in the Christian missionary camp.

The influence of secular thought on religion during he last two centuries has, therefore, been very great. While the cause of social reform (principally, the struggle against persecution of women and against caste) espoused by Raja Ram Mohun Roy, Keshav Chandra Sen asd Mahatma Gandhi tended to be presented in a religious framework (constituting, in effect he bulk of modern reformed Hinduism), the intellecual source of the transformation lay in modern European thought, ranging from utilitarian liberalism to utopian forms of socialism. A strong school of critics has always regretted the clothing of reform in a religious garb, as a result of which the Bengal Renaissance appeared pre-eminently as a "Hindu" phenomenon ; and similar criticism could be extended to Gandhi's use of religion, however greatly one admires his manful defiance of caste, his defence of women's rights and his crusade against communal slaughter

media siding revivalists !

No one need question the sincerity of the religious beliefs of these reformers, but it is probable that subconsciously, they felt that the work of reform would proceed with greater ease if one could present it in religious terms, appealing beyond the letter of scripture to the monotheistic spirit. But precisely because of such use of religion, the work of reform has had only limited success. If religion can be invoked for reform it can be invoked against it as well... More : modern media, by making possible an appeal to larger and larger audiences have made it possible for religious revivalism to flourish as a veritable parasite of modernization Sociologists have long told us (after Srinivas) how 'sanskritization' (whereby a lower caste pretends to higher status by going over to ritual and habits of higher castes) has strengthened both religious orthodoxy and casteism, in defiance of all the great work of the reformers and the traditions of the National Movement. The Arya Samaj has presented a seemingly pristine (but actually unhistorical) version of Hinduism, seeking to make it a proselytising faith of practically the same type as the Semitic religions.

Among the Muslims the trend conveniently but inaccurately called Fundamentalism derives partly from modern Muslim apologetics (e.g Iqbal), and partly from claims to go back to Seventh Century Islam (e.g Maududi)—the latter as unhistorical in its attempt as the Arya Samaj. The defence of Muslim Personal Law is a major plank of the "fundamental" platform in India; it essentially means protecting all the inequitable features of Muslim Personal Law,

"Among the Muslims the trend conveniently but in accurately called Fundamentalism derives partly from modern Muslim apologetics (eg. Iqbal), partly from claims to go back to 7th Century Islam (e.g. Maududi)—the latter as unhistorical in its attempt as the Arya Samaj."

except, thankfully, slavery which the British had already abolished in 1843. The fundamentalists deny women an equal share in inheritance, they defend polygamy, they decry the divorced woman's right to maintenance. Their counterparts among the Sikhs are not far behind. Two years ago a fairly authoritative committee of the Sikhs proclaimed a separate Sikh personal law, complete with bigamy, and an obligatory marriage of a widow with her husband's brother.

their divisive role !

Central to the success of these movements is the demand that one's primary loyalty is to one's religious denomination. Until a few years ago the editors and publishers of the RSS—organ *Organiser* used to declare their nationality as "Hindu", not Indian, in the requisite legal declaration; it is not known if this ever brought upon them any official reprimand. It is now amusing to see these very people wax eloquent in denunciation of Sikh extremists who call Sikhs a *qaum* or "nation". Clearly—Hindu chauvinism, Muslim communalism, Sikh separatism—all are equally guilty of invoking religion and making it transcend the two great loyalties that modern civilization has brought into being : the loyaly to one's country and the loyalty to the cause of the oppressed classes and peoples.

Whether we wish to see our country remain united (not only in terms of boundaries but also in spirit), or desire to work for its socialistic transformation, the resistance to divisive forces rooted in identification to community or caste, must occupy a crucial place in our endeavour There has been a long tradition in India, invoked by Raja Ram Mohun Roy and Mahatma Gandhi, that all religions are true and, therefore, are ultimately one, under the umbrella of monotheism : there should therefore be no conflict among them. This seems to have become implicitly or explicitly the official doctrine in free India as well. One respects the sincerity of those who propounded it, and lauds still more the purpose for which it is promoted, namely, communal amity. But the difficulty lies in the assertion being so unhistorical, and so much against the texts and traditions of individual religions that it has almost no prospect of being argued logically with proofs of the kind that one expects in rational argument. The doctrine can, therefore, be no more than a slogan, with great names attached to it, the chances of its success in convincing those who look to the scriptures and rites of their own faith as their one sheet anchor are extremely slender.

"The defence of Muslim Personal Law is a major plank of the 'fundamental' platform in India; it essentially means protecting all the inequitable features of Muslim Personal Law, except, thankfully slavery which the British had already abolised in 1943."

this duality, this Constitution !

The only way out seems to be to promote uncompromisingly a secular and scientific spirit. Unluckily, though we often assert the secular character of our republic, most of us mean by, "secular" no more than a policy of tolerance of other religions while especially promoting one's own.

In this duality our own Constitution has given us the lead. On the one hand Art. 15 forbids religious discrimination, Art. 25 gives freedom of conscience and Art. 27 forbids proceeds of taxes being used for promotion or maintenance of any particular religion. On the other hand, Art. 30 gives a sweeping right to religious minorities to establish educational institutions and claim government support at par with secular institutions, and Art. 290-A provides that over half a crore of rupees should be annually provided from the state revenues of Kerala and Tamil Nadu for the maintenance of Hindu temples. When comparing the Indian Constitution with as old a constitution as that of the United States, one is immediately struck by the fact that despite our protestations ours is not a secular constitution in the same sense as that of the United States There is no absolute separation here between state and religion as in the U S constitution and many other modern constitutions.

"Clearly Hindu chauvinism, Muslim communalism, Sikh separatism, all are equally guilty of invoking religion and making it transcend the two great loyalties that modern civilization has brought into being: the loyalty to one's country and the loyalty to the cause of the oppressed classes and people."

It is, therefore, not surprising that in actual practice our government's attachment to secularism so obviously lacks conviction. At functions for laying foundations of public works financed out of taxes paid by all citizens, the reciting of hymns and performance of other rites has become the norm. Similarly, we have the naming of public institutions (even universities totally established and maintained by the government) after purely religious figures. Then, there is the invasion of the media by religion. The recitation of the Sikh scripture on the All-India Radio was a demand which (in part) was the most easily conceded, because perhaps it fits in with what was already the vogue on the radio, viz., broadcasting of purely religious programmes.

It may be said that these practices of state cannot directly make even a marginal contribution to propagating any particular religion But this is not the issue. What they do is to suggest that the state itself is allied to, and supports, religious ideology. This not only gravely compromises the official professions

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of secularism, but helps make religious chauvinism politically respectable.

and what we need !

There is, therefore, the greatest need to assert true secular values and to demand their acceptance. We should perhaps establish an organisation on lines such as the civil liberties organisations to monitor and exercise vigilance against government lapses in respect of use of public funds, platforms and media for religious purposes.

Beyond all this, there is the need to promote the scientific temper, purged of all irrationalism and superstition. This would come not only by investing more and more resources into instruction of the physical sciences and technology. The neglect of scientific approach to the humanities provides fertile ground for the continuance and growth of parochial and communal ideas, which then easily engulf the scientists too. It is remarkable how many individual scientists fall prey to all kinds of superstition outside their laboratories

As an illustration of how communalism is generated in our educational system, I may offer the example of History A vast number of history textbooks still purvey, by a tendentious selection of facts or pure mythology, a strongly communal and chauvinistic approach to our past A recent collection of articles by veteran historians, subsidised by an official body like the Indian Council of Historical Research (ICHR), tells us that (a) the Aryans did not come from outside and the Vedas are older than the Indus Civilization; (b) the Dravidians have no claim to antiquity; and (c) Porus was victorious over Alexander. The next step, already taken by some venturesome fellow-thinkers, is to claim that all medieval monuments, the Red Fort, the Taj and so on, were built by Hindu rulers. During the 1970's NCERT published excellently written and balanced textbooks for secondary schools, the entire communal establishment rose in arms against them; and it needed a strong counter-agitation to prevent the Government from withdrawing the books. Clearly, while genuine difference of opinion must be respected in history-writing, a limit must be set for propagation of communal views through history textbooks. Such books must be put at par with any biology textbook which seeks to propagate a theory of Creation instead of Evolution (as indeed, the votaries of "Islamic Science" actually do).

battle for minds !

While we may as citizens legitimately make demands on government to change its practices and policies, it needs to be recognised that what is here involved is a battle for minds We must argue and persuade people. We need not quarrel with the individual's right to practice whatever religion he chooses to have faith in We must be careful in not unnecessarily hurting the sincere believer's susceptibilities. Religion has a place in the private domain of the individual. What we are concerned with is its invasion of the public domain; its being used (or abused) for dividing our people; and the corruption of the scientific spirit as a result of he growth of superstition and parochialism rooted in religion On these issues, we need to win over a very large number of people before we can hope to win skirmishes, let alone the battle.

"The fundamentalists deny women an equal share in inheritance, they defend polygamy, they decry the divorced women's right to maintenance. Their counterparts among the Sikhs are not far behind. Two years ago a fairly authoritative committee of the Sikhs proclaimed a separate Sikh personal law complete with bigamy and an obligatory marriage of a widow with her husband's brother."

Arrest religion

Exploitation, thy name is religion!

K A. Abbas

UP TO A CERTAIN AGE, I ALSO BELIEVED IN "ARRESTING" AND COURT-MARSHALLING RELIGION BY WHICH I MEANT *ALL* RELIGIONS. THE VERY NAME OF RELIGION WAS ANATHEMA TO ME, BECAUSE IT WAS, "THE OPIUM OF THE MASSES", ESPECIALLY IN INDIA....WHERE THE PEOPLE DID NOT THINK FOR THEMSELVES BUT BELIEVED IN CERTAIN RITUALS OF RELIGION, WHICH THEY HAD INHERITED FROM THEIR ANCESTORS

But, then, while writing my second big novel—a sequel to the first—that was *Inquilab*—I made a brief and hurried comparative study of all religions !

the study . . . !

First I read the *Quran*—Islam being the religion in which I was born and brought up ! I read the passages of *Quran* in English because it was easy to grasp it in a foreign language; and I read ·

> "The East and the West are both God's, therefore, whichever we turn, there is face of God, there is no piety in turning your face towards the East or West But he is pious who disburseth his kindered (in need) and to the orphans and the needy and the wayfarer."

Considering this was spoken to an illiterate nomadic people of a burning desert, a thousand and six hundred years before the birth of Karl Marx, was it not the essence of Socialism and Communism ?

Then, going back to the much older Upanishads, which broadly hinted that there was no bearded old Man sitting in heaven called God, (while Brihad-Arannay) Upanishad said that God (it called it "That") was ,

> "Not coarsen, not hard, not glow (like fire), not adhesive (like water), without thickness (intangible) without darkness, without air, and without space, odourless, tasteless, colourless, without eyes, without ears, without voice, without breath, (was it not to affirm that there was no being called God or Ishwar or Allah or Jehdah) was without existence "

And Bhagwat Gita—the one book which is the book regarded by all the Hindus says ·

> "Nature *Prakriti*, gives birth to all things, moving and unmoving" and, again, it describes the Supreme being, as "unborn, eternal, ageless . un-manifest, immortal, unthinkable, inconceivable in the search of all intellect, knowledge, truth, self-mastery, freedom from illusions non-violence, pain and pleasure, birth and death.

W ıv live with nonsense

penury, affluence, and breath," (Does it not affirm the presence of a power—that is in-tangible and manifest called *Ishwar ?*).

The *Quran* of the Muslims, while describing God as "deathless, formless, fathomless, and soulless' (almost the same words as used by the Upanishads is more specific in saying ;

"Assuredly in the creation of the Heaven and of the earth and in the alternation of Night and Days, and in the rain which God sendeth down from Heaven, giving life by it to the earth and after its death, and by scattering of all kinds of cattles and in change of the winds and in the clouds that do service between the Heaven and Earth, are signs for those who understand." (Scientists and Philosophers —K.A.A.).

what it reveals ;

All the Religions seemed to be hinting that Man had to be taught to live in harmony with *"Nature* which was the ultimate Principle" (Santhya School of Philosophy) and with other Men and Beasts.

What was common between all religions, and all prophets (including, Krishna and Rama, the Buddha and Mahavir were also prophets, as it has been said that Messengers had been sent to all the peoples. In Rig Veda it said, "TRUTH is one, and the Paths that led to the TRUTH are many."

All religions had held the Human Life sacred, and preached against wanton killing. "To kill one innocent man (according to Islamic scripture) is tantamount to the murder of the whole humanity."

Then why the race for violence and butchery in which thousands are being sacrificed, with cries of *Har Har Mahadev* and *Allah O Akbar* (which virtually mean the same thing !).

Then why this discord and disorder between Hindus and Muslims? Or between Hindus and Christians, between Hindus and Sikhs? No religious leader takes part in this discord and disorder. But those Hindus who do not read *Bhagwat Gita*, and those Muslims who do not read the *Quran*, in transition, no Christian who has read the gospel of Christ, and no Sikh who has read the *Granth Saheb* in which Hindu and Muslim religions are so well-blended, the gospel of Hindu *bhakts* and the gospel of Muslim *Sufis*, harmonizing with each other, so that Guru Nanak quotes the *dohas* of Bhakt Kabir :

"Kshatriya, Brahmin, Shudra, Vaishya (and even) Chandal may invoke (God) and obtain salvation. Whosoever realizes God, the self Nanak is like the dust of his feet"—Adi Granth)

history is guilty !

What is guilty is History—specially the History as it has been taught during the last hundred years, with Aurangzeb and Shivaji artificially mobilized against each other.

Aurangzeb was the bug-bear of the Hindus, while Muslims learnt to fear and hate Shivaji, while the truth of Real History was different. Documents proving that Aurangzeb was, indeed, an orthodox Muslim (whose orthodoxy came in deadly clash with the sect of *Shias*), Rationalists, Sufi saints like Sarmad and even Muslim musicians, who were banned in the Court, took out a funeral procession under the Red Fort walls.

The emperor asked, "Who has died ?" The processionists replied, "Your Majesty, it is Classical Indian Music."

"Then bury it so deep that it never rises again."

So Aurangzeb was not only a religious man but also an austere man, a kill-joy. Nevertheless there are records to show that he created trusts and endowments in favour of Hindu religious places like temples.

As for Shivaji, he was a deeply religious man, but he is known to be secularist not only whose General of Artillery was a Muslim by the name of Ibrahim Golandaz, but he had also engaged a number of Saracenic Muslim soldiers as his personal bodyguards. These examples of Shivaji had been deliberately hidden by the British historians, thus proving that *Divide et Impera* was an old Imperialist trick. They created the climate of hostility between Hindus and Muslims. But that does not mean that we are innocent in the event of Hindu-Muslim riots or Hindu-Sikh riots. We are not innocent of any blame.

The religions, in themselves, are not to blame, but only we are so obsessed with pseudo-religious *hocus-pocus*, regarding our own religion (whether Islam Hinduism, Buddhism, Christianity or Sikh faith), Orthodoxy leads to our different brands of obscurantism and, instead of Religion creating Harmony and Peace, obscurantism breeds hostility between religious groups.

exploitation all... !

Not only does it breed religious hostility, but all sorts of *hocus-pocus* are encouraged in the name of religion !

There are Hindu temples where young girls are kept as Devdasis to be sold to customers; this Muslim

shrine of some saint is a meeting place for boot-leggers and smugglers. The pseudo-religious leaders (among Muslims) encouraged their community to dream the impossible dream (in the end of 20th Century !) of reconquering like the Pathan and Mughal invaders, and the Hindus were taught to fear the ascendance of this Muslims' dream of reconquest. Fear of each other led to hostility between the two communities The British, when they were here as Rulers, encouraged the dreams and their dreamers, though it is ridiculous to hold them responsible for each and every killing in a Hindu-Muslim riot

Nobody had taught the people that all conquerors, with very few exceptions, behaved in a rude, crude and cruel manner—whether it was the Aryans treatment of the Dravidians and the Adivasis, the original inhabitants of India, the Pathan or the Mughal invaders, or the Portuguese, the French and the British "Companies" who came to "trade" and stayed on to 'rule" or the Nazis and Fascists in Abyssinia or Spain, or in small countries of Eastern and Western Europe during World War II.

It was left to Hindu and Muslim reformers to learn and to teach their respective people that the true History which again corresponded to the Law of Harmony taught by Nature which only enlightened Emperors like Ashoka, Akbar and Shivaji to follow the path of Statesmanship and Peace !

the missing part !

Religion, as practised today, has none of the original spirituality about it. Here and there may be exceptional cases of a Man of God (very different from God-men) who spends all his time in doing *dhyan*, and prayers. Most of the God-men are busy playing Politics. They are ornaments of a Chief Minister's Court, and hold a position superior to the Chief Minister who bows at their feet.

There was the case of the Guru of Janata men who had been given a free pass for him and his wife, by the then Railway Minister. He was caught travelling in a First Class 2-berth coupe, not with his wife but with another, younger and more comely Lady Doctor. It was front page news and the Big papers of the capital were publishing the sensational news on the front page (it was "killed" in other editions), telephone calls were made to Parliament House and a Cabinet Minister was called out of Parliament House to answer the telephone that had traced him there. It was the Police which was forced to immediately release him and his pass was confirmed whomever he might be taking with him. Later, it was confirmed, and phonetically corrected. After that the God-man proceeded to Nepal to perform the Yagna for stability of the Janata Party. As history shows, the Janata was not stabilized but, a few months after that Yagna, went the way of all flesh, fresh elections and final defeat at the hands of the very electorate which had put them in power in the previous election.

Since then such God-men have played a significant role in New Delhi. Whatever the Party in Power, the God-men swarm around in the corridors of Power. The late Prime Minister was famous for prostrating herself in all manner of places of worship—Hindu temples, Sikh temples, Muslim *mazaars*, Christian cathedrals to get the blessings (and votes) of all denominations—Hindu, Muslim, Sikh and Christian 'holy places.

This was done in the name of Secularism which was interpreted as obeisance to *all* religions, not that the Politics was far removed from *any* religion. Thus secularism has been misinterpreted as Multi-religious *devotion*. This is closely connected with the Vote Banks of different denominations—that is why different denominators have to be pleased and appeased for political purposes

and the apt question...!

"Why live with nonsense ?" is a particularly apt question. It applies to Hindu nonsense, Muslim and Sikh nonsense and Christian nonsense

The tragic part of the scenario is the role of the State, which is supposed to be *Secular*, but which dispenses favours and patronage to all religions and their God-men and their nonsense of all shades of *hocus-pocus*, which has nothing to do with real religion or Spiritualism but much to do with denominational Vote Banks needed at the time of elections.

This can be done by freeing all religions from the hands of its exploiters, by confining each religion to homes and to their respective places of worship alone,

divest State and Government of their traditional role of selling religion and make it work to promote Humanism and Rationalism,

and base all educational and scientific explanations of human knowledge and growth, and teach in schools no particular religion, but the religion of Humanism, which will include the best teachings of *all* religions.

Thus the essence of all religions will be dispensed with doses of humanism, thus freeing religion from its exploiters and touts.

Thus our people will be united on the basis of Humanism, not the idea of composite culture, by promoting Humanism, refashioning Education and all text-books and using the powerful Media—Radio, Television and the popular Press to the same idea and ideal.

Promote humanism

Secularism or self-deception ?

Interview with P. N. Haksar

Chief Editor : This sordid scenario; terrorism, communal clashes and wave of revivalism seems to be playing havoc with life today. Threat to national unity goes real ! How you look at the phenomenon ?

P. N. Haksar An ancient society like ours, which has a history of several thousand years and is deeply rooted in ancient and medieval socio-economic structures, is bound to experience extreme turbulences in the process of coping with complex problems of political, social, economic and cultural transformation. The transformation of Europe from medieval to modern was marked by series of revolutions Even little England could not bring about the change in any gentler form. However, the problems of European revolution were not aggravated by the imposition on it of foreign imperial domination. The inanition of India, the total breakdown of its internal balances, the imposition on it of alien institutions, language and culture have extraordinarily added to the complexity of the problems we have been facing since we gained our Independence. It is, therefore, not the turbulence in our society which troubles me, but the shape and the form which it is increasingly tending to take. You have cited some examples in your question, e.g., communal clashes, inter-caste killings, regional conflicts, etc. These, I regret to say, are entirely the product of flabbiness in our thinking, short-term view of politics, tortuous ways of looking at our economic problems and, the last but not the least, the most disturbing absence of thought and perception

C.E. : The communal virus, which goes to poison our living, is not something new in our body politic. It did exist during our struggle for freedom and continues to live with us, perhaps in greater intensity even today. How you see the situation?

P. N. Haksar : In answer to the pervious question I ended up by saying that the way we think and perceive are disastrously erroneous; and the most tragic error lies in thinking that phenomenon which appears in the shape of "Communalism" or "Regionalism" or "Casteism", can be met by the simple device of waving the genuinely spurious flag of "Dharma Nirpekshta". We have been practising this self-deception for a very long time. Great men of the stature of Gandhi or Nehru could sustain it in letter and spirit and present it as an anti-dote to communalism. But when we cannot see anywhere on the horizon any one of the stature of the great apostles of the freedom movement, we have to achieve the ends we are seeking not through the charisma of a few individuals but by means of creating institutions which will be inspired by reason, rationality and not by bigotry. This is where we have singularly failed.

To this day, we have failed to understand the imperatives of the process of secularisation of the Indian mind. Our institutions do not feed our politics. Actually, if one is honest, politics feeds upon caste differences, communal differences, linguistic differences, ethnic differences, instead of transcending these differences. The result is that the slogans and banners

Why live with nonsense

do not correspond to the reality or actual practice. Given such a politics which is causing and will cause increasing disintegration and given the kind of economic policies we have been pursuing, it is remarkable that disrtubances, clashes are not more widely spread than they are at present. Politics talks of equality; the economic policies breed inequality. Politics talks of 'Dharma Nirpekshta'; the practice is deeply rooted in theological moulds of thought and by most desired religious ritualism even on State occasions. The whole idiom is non-secular and, the worst of all, with our educational system as it has grown, has been totally sterilized against the virus of reason and rationality.

C.E. : Having won freedom, we chose to live a secular way of life. This secular way of life, and all that goes with it, seems to have made no difference in improving quality of life. We live and work to nurture our identities. Is this all what we precisely aimed at?

P.N.Haksar The way you have posed the question itself shows what a long way we have to go in achieving clarity of thought and words' I don't think we chose what you call a secular way of life. There is no such thing as the secular way of life Life is too complex and complicated, both at the level of individual and that of society, to be described as a secular way of life or a religious way of life. What we hoped for was that in the large areas of human endeavour where decisions can be made on the basis of positive knowledge derived as much from natural sciences as from social sciences, policies and decisions will be made in terms of ascertained and ascertainable facts and on the basis of reason and rationality It was also hoped that our educational system would stimulate what is called the secular forces in an ancient society dominated by dogmas derived in the name of religion. As I mentioned earlier, our politics, our economics and our educational system as well as the actual functioning of our State negates the secularisation process in India. Our State, despite learned books written by confused jurists and judges and academics, is not even as secular a State as that of the United States of America or France. It is not even as secular as the British State. Inevitably, therefore, looseness of thought produces social, cultural and political flabbiness which we have been witnessing all around us for a very long time.

C.E. : When we are at it, would you please clarify what exactly we had in mind to give ourselves a secular way of life. Obviously, it couldn't be as we see it in action in our midst today.

P.N. Haksar : I think I have already answered this question. But I should make here a very brief point. There is no such thing as Indian secularism any more than there is a Chinese secularism or a French secularism. Secularism is a universal historical process which through knowledge and experiences enables human beings to base their actions and their thinking on facts and reasons and not on the basis of authority of a scripture. It is as unending a process as the human quest for knowledge is unending. In the European experience, secularism of human mind was achieved through very great intellectual effort which goes under the name of Renaissance and Reformation. Indian society surely needs this Renaissance and Reformation without which it will wallow in the primordial slime.

Chief Editor : History is witness to the fact that religious create and foster community cages only, where we nourish our pride and prejudices. Wittingly or unwittingly, we fall prey to the cage life and actually react, not rationally, but as the cage life permits. How you see life?

P.N. Haksar : Taking the last part of your question first, as to how I see life; I am afraid, I see the life in our country today as a tension between hope and despair. The basis of hope is obvious enough. There are a very few countries in the world which nature has so well endowed as India There are a very few countries in the world where human beings are endowed with and can be endowed, with little effort, with knowledge and skills. If I recall correctly, John Stuart Mill said that human beings, if they are only properly fed and educated to acquire skills, can build any civilization. They correctly design. The despair of course is there is no design. There is no nourishing food in the stomachs of millions of our human beings and our educational system produces only semi-literates and illiterates. So I often think that India is a society consisting of hundred hungry dogs with only ten bones; they tear each other, snarl at each other in snatching the few bones. To add to the complication, the dogs are not evenly matched Some are bull dogs, others are mere poodles. The bull dogs snatch the few bones by organising themselves as Hindus, Muslims, Sikhs or Christian and they organise themselves with equal felicity as Rajputs, Bhumihars, Jats and so on I regret that my answer to your question is in palable.

There is, I am afraid, great confusion of thought in assuming that the process of secularisation must inevitably come in conflict with religion. In my view there need be no such conflict once the domain of each is clearly defined. There is also the difficulty about defining religion. Personally speaking, having read all that there is to be read about life and work of Buddha, Jesus Christ or Mohammed, I have no difficulty in understanding what each one of them was trying to achieve. But when religion gets organised and you have the so-called representatives of the great prophets and you have the institutions which speak in the name of Buddha, Christ or Mohammed and when religion and State both get linked up you have human history as seen in most of saguinary

(Continued on page 45)

Let humanism replace this nonsense!

Vasant Sathe

Taking to humanism, and with fastness, asserts Sathe, is the pre-requisite to our stepping into the year 2001 as better human beings. It is high time, he cautions, that we worked to say good-bye to obscurantism, fundamenlism and fanaticism—all signs of nonsense! He pleads, for some hard thinking, and adds "those who refuse to think are bigots, those who cannot think are fools, and those who dare not think are cowards."

I WISH TO CONGRATULATE YOJANA—for taking some bold initiatives in bringing out issues on topics which require free and rational thinking in national interest. The proposed theme, "why live with nonsense" is very timely and appropriate. Indeed, we are living in an era when although the advances in science and information make reasoned knowledge more easily available and possible, yet the human society seems to be degenerating more and more towards obscurantism, fundamentalism and fanaticism—all signs of nonsense!

The dictionary meaning of the word 'sense' is "discernment, understanding, appreciation, feeling for what is appropriate, soundness of judgement, reasonableness &c". Obviously, the opposite of all this 'non-sense'. Human species is the only known spec on the planet earth which has this faculty of reasoni and discerning between what is appropriate and ri or wrong. There are other species who are known act by animal instinct, but not by reasoning.

human evolution, a

In the entire human evolution, from the cavem stage to the spaceman stage, human society has evolv mainly on account of this facility of its 'sense' whi has enabled it to ask questions, inquire, gather inf mation, experience, store all these in the compu of his brain, reproduce it, document it—beginni

with the walls of the caves coming today to micro-processor chip. And, yet, human mind or the faculty of the brain is known to have evolved and exploited only partially. With the information and knowledge now available, the intelligent human being and the society to which such intelligentsia belongs, are on the threshold of what is described as 'exponential revolution'. As against linear growth or quantum jump, where developments and changes take place in the field of science and technology over a period of few years, this growth will enable knowledge and technological power by virtually rocketing through the space. This has become further possible by dramatic changes in informatics, computer science, communication through fastest media, genetic engineering and in the field of research done in ESP (extra sensory perception). In short, that society which in the years to come will master computer and micro-processor science and technology along with command in the space, will dominate the entire human race. Rest of the human beings would just be treated as chattel. It is here that the call to prepare for the twenty-first century becomes so very relevant and urgent.

'Let us look at these human beings who, contrary to all teachings of all the founders of religions of humanity, instead of believing in the oneness of the supreme called by whatever name, insist that what is written in a particular book is the only truth and anyone believing otherwise is an infidel. Can there be a greater basic nonsense than this?"

this mumbo-jumbo !

What is stated above is no longer a matter of fiction. It is nearly a reality today. Let us imagine in this background those human beings who still believe in *mumbo-jumbo*, who are bigoted enough to believe in godmen producing rings and ashes by magical miracles. Let us look at these human beings who, contrary to all teachings of all the founders of religions of humanity, instead of believing in the oneness of the supreme, called by whatever name, insist that what is written in a particular book is the only truth and anyone believing otherwise is an infidel. Can there be a greater basic nonsense than this? But, as I have said earlier, the most original nonsense is the creation of the concept of a god and attribute him the authority and power of the entire creation. It is true that this most original invention of the human mind has helped him to take solace when he could not find answers to certain questions. Living in his early cave he did not know how fire occurred and was scared of it. He did not know why it rained, but he was happy about it. The biggest delight for him was the sun-rise which not only gave warmth but also took him from darkness to light, see things allround. But he did not know what t[he] sun was and what even the planet earth was. Henc[e] fire, rain, sun—everything became gods, and the ve[ry] simple logic of the questioning mind led him to fe[el] that there must be someone, even more powerful, wh[o] must have created all these. But then you go on fro[m] a creator to another and when the mind gets bogge[d] then the enlightened one would say that the ultima[te] is something beyond comprehension by the mind an[d] therefore stop comprehending about him and y[ou] accept, because even to the most enlightened an[d] intelligent human mind there will still remain ques[tions] unanswered and his mind cannot rest at pea[ce] unless he accepts a proposition of some suprem[e] authority. I have dwelt at length on this poi[nt] because I feel that the beginning of real nonsense [is] from this point.

the real nonsen[se]

Imagine our reaching a stage where it is conside[r]ed sacrilegious and even profane to question t[he] authority of a particular book—not only the bo[ok] but the authority of the authors of these books. Ev[en] to say that they were human beings albeit enlighten[ed] would be treated as perfidious. This is one of the m[ost] basic nonsense which has plagued and continues [to] plague human mind and human society. It is n[ot] strange that all prophets began as rebels against t[he] orthodox bigotry of their times, but their followe[rs] converted their teachings into rigid dogmas. Once y[ou] accept a point that something cannot be questione[d,] should not be correlated to reason, then at that poi[nt] of time mental progress stops—not only stops, b[ut] stagnates, and soon like stagnating water, it ge[ts] polluted by fanaticism and thereafter starts stinki[ng] with fundamentalism and obscurantism—because o[ne] thing leads to another and more and more things g[et]

"Imagine our reaching a stage where it is consider[ed] sacrilegious and even profane to question the auth[o]rity of a particular book—not only the book b[ut] the authority of the authors of these books. Even [to] say that they were human beings, albeit enlightene[d,] would be treated as perfidious. This is one of t[he] most basic nonsense which has plagued and contin[ues] to plague human mind and human society".

added to the category which cannot be questione[d.] Why must a particular dress be worn, and that t[oo] for all times, must not be questioned. One c[an] reasonably understand that if you are part of [an] army or a collective body and there is a prescrib[ed] uniform, you wear that uniform while on duty. B[ut] to say that we must be in this uniform twentyfo[ur] hours and for all the 365 days in a year—and n[ot] only one year, but all your life, otherwise it will [be] a religious sacrilege—is something which is not on

nonsense but the height of it. In any case, why not uestion and ask its validity today? But even that ; not allowed!

If one knows the so-called Hindu society closely, feel that the biggest nonsense has been the consoli-ation of the caste system based on birth. Although riginally the broad strata were created for an orderly ociety based on vocation and merit, it deteriorated ito a birth-oriented system which became water-tight tagnating pools, and as stated above, started stink-ng later on. It is only the vibrant, dynamic and ques-ioning original Vedic thought which proclaimed the ight to question, which declared that knowledge can ome from all over the universe, which recognised that he supreme was one but called by various names and ll creation was one that created repeatedly, enligh-ened rebels like Buddha, Mahavira and Guru Nanak nd hundreds of other saints and savants who const-intly rebelled against fundamentalist rigidity and loctrinnaire dogmatism. It is this that helped the o-called Hindu society to preserve the higher values nd qualities of its heritage and culture. But we are eeing that fundamentalism and obscurantism, born ut of closed unquestioning minds, is once again aising its ugly head, threatening the very foundations of our unity and integrity as a nation.

this ignorance all

The basic difference between science and religion s that whereas science is based on questioning and inquiring which is endless, in religion you begin rom a point where it is said, "accept this without questioning". This is where the basic difference bet-ween ignorance and knowledge lies. But let religion iot be confused with spirituality, because a spiritual person, whether an enlightened seer or a Buddha or a Nanak or a Kabir or other saints and sufis—ill have had this quality in common with scientific nind, namely, that of questioning. All of them

'Once you accept a point that something cannot be questioned, should not be correlated to reason, then it that point of time mental progress stops —not only stops, but stagnates, and soon, like stagnating water, it gets polluted by fanaticism and thereafter starts stinking with fundamentalism and obscurantism".

questioned the validity of established orthodoxy and irrationality. There is a beautiful story about Guru Nanak Dev. It is stated that he once stood in the river Ganges at Varanasi and started throwing water by his hands towards the direction of North-West. Some brahmins, who watched him, started laughing at him and asked him why he was doing such a ridiculous act. Nanak replied that he was trying to sprinkle water on his fields in his homeland in Punjab. At this they ridiculed him further and said how could such a thing even be imagined, except by a mad man. To this the answer of Nanak Dev was, "if standing in the river bed you could offer some water hoping it to reach the sun, why should water not reach a much smaller distance from Varansasi to Punjab?"

There are many such anecdotes by which our saints have brought out the fallacies of orthodox and fanatical rituals and beliefs of their times. Should

"Can there be any greater nonsense than this non-questioning attitude, more so, when an attempt is made to inculcate young impressionable and even educated minds with such obscurantist, unquestioning irrationality and leading them to fanaticism and fundamentatlism of the worst kind? One could go on to many other fields in social, political, economic, educational and other spheres where prevalence of nonsense is replete".

this tradition of the questioning mind of these saints and prophets not be followed today by those who claim to be followers of any religion? Can there be any greater nonsense than this non-questioing atti-tude, more so, when an attempt is made to inculcate young impressionable and even educated minds with such obscurantist, unquestioning irrationality and leading them to fanaticism and fundamentalism of the worst kind? One could go on to many other fields in social, political, economic, educational and other spheres where prevalence of nonsense is replete. But in every place, the real culprit is this unques-tioning attitude and those who believe that they or their thoughts should not be questioned I will deal with a couple of them.

and what is needed !

The other area where nonsense plays havoc in human life is the field of emotions. Although emo-tions are also a faculty of mind, the seat is not the anatomical part called heart, but very much the human brain. The only difference is emotions are closer to the basic instincts of human being as one of the mammals. For example, emotions like the attraction of a mother for her baby and vice versa or of a male and a female for each other with a desire to woo and mate are common natural instincts to all species necessary for procreation and continua-tion. But the human being with his intelligence learned to eulogise certain aspects to suit his per-sonal and social conveniences and stability as well as security. Thus love has been given various dimensions on personal level, for your family, clan, language, region, state, nation and so on and can be raised to the point of frenzy. We are daily witness-ing the unnecessary loss of much of the innocent life and destruction of property on account of

(Continued on page 40)

Promote humanism

These scriptures no match to our Constitution!

Jamal Kidwai

This revivalism we see in our midst today, was, in fact, very much a part and parcel of our national movement, says Jamal, and adds religion, with its inherent thrust to regulate a large part of our life, runs into direct conflict with the Fundamental Rights as enshrined in our Constitution. It is time now, he asserts, to give up the mistaken assumption that religions of India can be made the instrument of national integration. The remedy, he says, lies in pushing or even dragging ourselves from this quagmire and learn to live as rational beings.

THE PRACTICE OF SECULARISM IN INDIA is more a legacy of our national movement than the expression of the precepts of our Constitution. The State created by the Constitution is an impartial instrument of national purposes, non-aligned with any religion in this multi-religious country, pledged to political, social and economic equality of all citizens irrespective of sex, caste and creed, committed to social reform, social change and the removal of discrimination between one citizen and another. But the compulsions of political craft and electoral competition have impelled populist identification by our leaders with the traditional ritual of all communities.

the three revivalisms!

There were revivalistic strands in the national movements from the very beginning. But the big

Why live with nonsense

spurt to revivalism came in 1920, when Gandhiji yoked Hindu and Muslim revivalism to the chariot of the national movement. In the Congress-Khilafat Movement of the next two years, there was Hindu revivalism nostalgic for the Hindu past of India which was free from the Muslim incubus and hoping for a return of the nation to purer Hindu culture and values. There was Muslim revivalism harking back to the crusades of Islam in the sands of Arabia thirteen hundred years ago, proud of the Muslim past of India and hysteric about the threatened liquidation

"In the Congress-Khilafat Movement of the next two years, there was Hindu revivalism nostalgic for the Hindu past of India which was free from the Muslim incubus and hoping for a return of the notion to purer Hindu culture and values."

of the Caliphate in Turkey by the victorious Anglo-French Allies in World War I. These two revivalisms travelled hand in hand oblivious of their fundamental conflict.

The political stage in India was thick those days with long haired and saffron clothed Swamis and long robed Maulanas with flowing beards punctuating their orations against British rule with slokas from the Hindu scriptures and verses from the Koran. Soon, the Sikhs also came in with the Akali movement for the control of the Sikh Gurudwaras against the British-supported Mahants. The Congress supported their just cause. But the foundations were laid at the same time of Sikh revivalism which was to exact its price later.

Gandhiji walked in the garb of a Hindu. But his own religion was a deep humanism, a selective revivalism which had borrowed the techniques of several religions that suited his mission. He took non-violence from Christ, the fervent assertion of human equality and brotherhood from Islam. He took detachment from the 'Gita' and its concept of duty fearlessly done without expectation of reward but ignored the contest of war in which it was composed or revealed, its hierarchical ordering of society into castes. He had no truck at all with the code of Manu. He declared that he was not bound by any interpretation of the scriptures which was repugnant to reason and commonsense. He was not at all in contemplative tradition of Hindu Saints. He was like Christ. His capacious heart went out to any religious community in trouble. He was identified with the Parsis when both Hindus and Muslims set upon them in Bombay during the visit of the Prince of Wales, with the wars of the Hindus in Noakhali when the East Bengal Muslims pounced upon them, of the Muslims in Calcutta and Bihar, Delhi and the Punjab set upon by the Hindus during pre-partition and post-partition riots. The like of him did not exist in his following except Jawaharlal Nehru.

For the next ten years, the Congress continued in its political promiscuity. Many congressmen shuttled freely between the Congress, the Muslim League, the Khilafat Committee, the Hindu Mahasabha and the Sikh organisations. It was only in 1935 that the Congress could bring itself to declare that membership of communal organisations was inconsistent with membership of the Congress and called upon its members with such double affiliation to resign.

the secular phase !

The thirties were indeed the most secular phase in the national movement. It was in that decade that Gandhiji launched his big onslaught against untouchability and Jawaharlal Nehru led big mass movements of the peasantry in U.P. and Bihar, giving social and economic content to the struggle for independence both in thought and action. Muslim communalists went out of the Congress while Hindu revivalists lay low, their language and cultural fanaticisms muted for the time being. Socialists and communists joined the Congress strengthening its modernist and secular thrust. Outside the political arena, the Progressive Writers' Movement brought the younger writers of all Indian languages together to expose religious obscurantism and hold up the mirror to the struggle and travail of toilers in this land. The Constitution of India is really the legacy of that ideological springtide in the national movement. Thanks to Gandhi and Nehru, it only suffered minor distortions from post-partition situation in which it was framed.

The Constitution of India guarantees to all Indians social, economic and political justice, liberty of thought, expression, belief, faith and worship, equality of status and opportunity. These rights are guaranteed by various articles of the Constitution but their exercise is subject "to public order, morality and health" under Article 25(1) and the power of the state under article 25(2) (a) to make laws

"There was Muslim revivalism harking back to the crusades of Islam in the sands of Arabia thirteen hundred years ago, proud of the Muslim past of India and hysteric about the threatened liquidation of the Caliphate in Turkey by the victorious Anglo-French Allies in World War I."

"regulating or restricting any economic, financial, political or other secular activity which may be associated with religious practice."

religions in conflict !

Herein lies the central secular thrust of our Constitution. All religions in India have a central core of belief and rituals of worship which the Constitution is pledged to respect. But around this sacred core is a thick crust of the mundane claiming to regulate a large part of the lives of their followers—a stratified social structure of high and low, the ordering of

economic life, laws of inheritance and marriage and even criminal laws. Here all religions of the country come in conflict with the fundamental rights of our Constitution. The Hindu code of Manu is the very antithesis of our Constitution. Muslim personal law of marriage and inheritance militates against equality of women with men guaranteed by the Constitution. The claim of the Sikh Khalsa to both spiritual and temporal power is in conflict with the temporal jurisdiction of our state

"The Sikhs also came in with the Akali movement for the control of the Sikh Gurudwaras against the British supported Mahants. The Congress supported their just cause. But the foundations were laid at the same time of Sikh revivalism which was to exact its price later."

But thanks to electoral compulsions, these conflicts are being underplayed. Every community in this country is a vote bank and each communal ego must be flattered or pampered by our leaders. The concept of the non-alignment of the state with various religions has given place to the practice of equal alignment with every religious community or caste in the country. Equal alignment has led to a plethora of symbolic gestures of identification with each community in the land—Holi Milans, Dewali Milans, Id Milans, Iftar parties during Ramazan, Kirtans and Yagnas, temple ceremonies, anniversaries in Muslim shrines. All these are patronized by our leaders Despite the commitment of the Constitution to scientific attitude and scientific temper, most of our leaders are hugging some Saint, Sadhu, Fakir, Astrologer or sooth-sayer to themselves. These superstitions remind one of the rulers of the Roman Empire during its decline and fall, or the Nazi elite on its last legs in Germany

These gestures have brought national integration no nearer. The Muslims in Moradabad, Aligarh, Bhiwandi and Bihar Sharif, the Sikhs in Delhi, the Muslims and Bengalis in Assam are still licking their wounds from the last pogroms unleashed against them; the Hindus in Punjab live in daily fear of murder and arson while the upper and lower castes in Gujarat are locked in bloody conflict over reservation policy in educational institutions and services.

this mistaken assumption!

It has been a mistaken assumption that the religions of India can be made the instruments of national integration. Every religion is a mixed bag of love for insiders and varying emotions ranging from hate to contempt to condescending tolerance for outsiders. The only dependable scripture for our secular state is our Constitution. It claims no divine sanction and it can be amended to embrace the expanding concepts of human equality and dignity and worth of the individual.

The present interpretation of secularism by our leaders is a far cry from the days, when Gandhi questioned the validity of the scriptures, when Jawaharlal Nehru unsuccessfully resisted the resolve of President Rajendra Prasad to preside over the ceremony of commissioning the renovated temple of Somnath but, successfully, overrode Rajendra Prasad's opposition to the Civil Code Bill.

We are busy pampering all religions in this country. More so Hinduism as it is the religion of the dominant majority. But we must remember that Kemal Ataturk and Stalin had to catch their people by hair and drag them into the twentieth century. We are not quite in the twentieth century though our leaders have the ambition to take India to the twentyfirst century. This would need both pushing from behind and dragging. It would require strength and firmness and conviction. The present Government has a huge majority in Parliament and they can give this country a powerful push forward if they have the same conviction about the fundamental principles of our Constitution as the Russian communist party had in the teachings of Marx and Lenin.

"The Hindu code of Manu is the very antithesis of our Constitution. Muslim personal law of marriage and inheritance militates against equality of women with men guaranteed by the Constitution. The claim of the Sikh Khalsa to both spiritual and temporal power is in conflict with the temporal jurisdiction of our state."

"It has been a mistaken assumption that the religions of India can be made the instruments of national integration. Every religion is a mixed bag of love for insiders and varying emotions ranging from hate to contempt to condescending tolerance for outsiders. The only dependable scripture for our secular state is our Constitution."

Promote humanism

This preaching of 'tolerance' just won't do!

Mohit Sen

This preaching of 'toleration' to combat communalism just won't do, because, says the author, the impact of any form of religious intolerance from any quarter cannot be offset on religious grounds but, on the contrary, creates religious intolerance all around. And he adds, a secular state has to propagate secularism as a faith and an entire system of values. It cannot confine itself to propagating the equality of all religions and the value of religious toleration.

RELIGION IS CERTAINLY *NOT* NONSENSE. But the social uses and role which have been assigned to it at different times and in different countries certainly have made it dangerous nonsense on occasions

Contrary to what is popularly believed, Marx did not just say that religion was the opium of the people. As a matter of fact, though he did use that particular phrase, its actual author was the Christian socialist, Charles Kingsley, better known for his tear-jerker story of the Chimney sweep.

Marx and Gandhi

Marx was actually quite poetic about the place of religion in the minds and hearts of the people. He

Why live with nonsense

called it the heart of a heartless world, the spirit of spiritless situations and a false flower meant to hide the chains which men were forced to wear. It is in that sense that he termed it the opium of the people.

He went on to say that the false and bedecking role of religion was pointed out by him not that man should live with flowerless chains upon him but that he should reach out for the living flower. Illusion had to be replaced by hope.

"Religion is certainly not nonsense. But the social uses and role which have been assigned to it at different times and in different countries certainly have made it dangerous nonsense on occasions".

If this was the attitude of Marx, what is quite as interesting was the aproach of Mahatma Gandhi to the same question. It is often said that it is he who brought religion into the freedom struggle when it was attaining mass dimensions and in order that it should retain and expand its mass character.

In an important sense this is true. The idiom he used and the forms of mass mobilisation did have a religious flavour and character. But this was essentially because he could not help himself. He was religious, a *Karma Yogi* who believed that to free India was the call of the divine. He has described himself as a poor and weak man who only wanted to do good.

the two vital aspects !

There are, however, two aspects to Gandhiji's approach which must never be forgotten. The first is that he wanted with all his heart and strove with all his strength to secularise the vast Hindu masses who constituted then, as they constitute now, the bulk of our countrymen. He wanted to, as it were, Indianise the Hindus, to make them realise the imperative of toleration on the basis of his own interpretation of Hinduism. Gandhiji was the great Indian unifier in the tradition of Buddha, Asoka and Akbar.

The great contrast is with Jinnah who was scarcely even a believer in Islam but who used it to separate the Muslims, de-Indianise them and to disrupt the unity of our country and our people.

Another aspect of Gandhiji's approach to religion was his stern opposition to its use to make the masses passive. It is he who said that religion comes to the hungry in the shape of bread. It is he who firmly reminded Tagore of the need for disciplined struggle since in India the human kind (Tagore had evoked the image of the free flight of birds as the essence of liberation) retired to sleep tired and awoke even more tired since he was without nourishment. Hence, freedom required the ending of this situation which, in turn, required discipline, organisation and battle.

True, Gandhiji's great compassion for the poor h an element of what can be called substitutionism.] wanted to wipe every tear from every eye and r that the poor themselves should brush aside their te and march to the fight against the situation and t persons which had made them cry. But the co passion was there and it became itself a mighty mo liser. It made the so-called middle classes turn what Gandhiji termed as the true worship—the wo ship of Daridranarayana.

Here, too, religion was to be a unifying force, t means by which the intelligentsia and the poor wou march together to their destiny of freedom.

and the two vital episode

Yet there are two significant episodes in t Mahatma's life which can lead to the conclusi that he was conscious of the limitations of religion

The first concerns the relation between God a Truth. It was some time in the early thirties, if I r member alright after he had met rationalists a atheists. He stated that prior to this, in his view, G was Truth but he found that there were some w were votaries of truth but not believers in God. S Gandhiji reversed the motto and stated that he no believed that Truth was God ! It is a significant inve sion and of great relevance for our troubled time

The second incident occurred during Gandhij epic last days in Calcutta in 1947. He had alrea refused to give a message to All India Radio on I dependence Day. He stated that if this was bad l it be bad since it was all darkness within.

At the height of the Hindu-Muslim riots in Calcut once a band of armed Hindu youth came to t house where Gandhiji was staying. It was in the afte noon when he was sleeping. Professor Nirmal Bo came out and asked the young men what their clan our was about and what it was that they wanted. The

"The views of Marx rightly understood and the idea as well as experience of Gandhiji seem to me to indi cate certain fundamental indications of what w would be doing as we seek to strengthen the secula foundations of our polity."

said they wanted the Mahatma's blessing as the were going to protect the Muslims with weapons i hand. The Professor rebuked them reminding the of the Mahatma, being a votary of ahimsa. The yout persisted. Hearing the noise Gandhiji came out, en quired as to what the matter was and then gave hi blessings to the armed youth. He said that they coul try where he had failed !

The views of Marx rightly understood and the idea as well as experience of Gandhiji seem to me to in

dicate certain fundamental indications of what we would be doing as we seek to strengthen the secular foundations of our polity.

the six things to do!

First

That the banishing or ridiculing of religion is not the same as secularism, apart from being wrong in itself.

Second

That rationalism or even humanism cannot be the substitute for the religious experience, the religious guide to living and the religious binding of a community or people.

Third

Toleration of other religions is quite compatible with some religions, above all, Hinduism. But a tolerant religion has its limits and intolerance has also the same religious sanction. Besides, a tolerant religion cannot induce tolerance in other religion. The impact of any form of religious intolerance from any quarter cannot be offset on religious grounds but, on the contrary, creates religious intolerance all around.

Fourth

In countries like ours with such deep religious traditions and contemporaneous persistence of religion as an extraordinarily important element in popular consciousness, containing secularism cannot be anti-religious. It is as believers that the vast majority of our people have also to be adherents of secularism. It is precisely here that Gandhiji's approach is of the greatest value.

"While religious toleration has, therefore, to be an essential ingredient of India's secularism, it cannot be the only or the main element. The main element of India's secularism has to be the divorce of religion from politics. The Indian state has not only to be a non-theocratic state, it has to be a state which is non-denominational and opposed to any intrusion or influence of religion."

Fifth

While religious toleration has, therefore, to be an essential ingredient of India's secularism, it cannot be the only or the main element. The main element of India's secularism has to be the divorce of religion from politics. The Indian state has not only to be a non-theocratic state, it has to be a state which is non-denominational and opposed to any intrusion or influence of religion.

Sixth

A secular state has to propagate secularism as a faith and an entire system of values. It cannot confine itself to propagating the equality of all religions and the value of religious toleration. It must do that, but it must do more than that. It has to propagate the concept of religion-free politics and of man-made rational history.

and the four ways!

ONE

This it can and must do in four ways. To begin with it must celebrate with as much fanfare as possible great secular festivals—Independence Day, Republic Day and May Day. These are all events which are totally non-religious in character, celebrate achievements and express aspirations which are entirely at the level of man as man.

TWO

This has to be followed up by the presentation of our freedom story from the secular angle. That is to say, not only from the angle of a strugle in which men and women of all religions participated but as a struggle for non-religious goals. The leaders of the freedom struggle when they took decisions regarding issues, forms, duration and tactics of the struggle did so as secular beings despite the fact that the overwhelming majority of them were believers in one or another religion. Without this approach neither could the unity of the freedom struggle have been maintained nor rational decisions could have been taken. And without these rational decisions based on realistic assessments and analysis, freedom could not have been won.

THREE

One has, then, to go further to illustrate the retrograde and anti-national use made of religion in politics both in the freedom struggle and in the period of free India. It is no accident that the British imperialists did all they could to foster Hindu as well as Muslim and Sikh and Christian communalism as their most potent weapon against resurgent nationalism. *Divide et impera* was a cold-blooded and deliberate policy of the British colonialists. It continues to be the chief weapon of destabilisation to negate the freedom, the imperialists were forced to concede. This exposure and combatting of communalism has to be done in a consistent and persistent fashion. It has to permeate our entire educational system and be a part of the programme of the mass media which is in the hands of the State.

FOUR

Finally, a great deal of thought and consideration has to be given to the relegation of religion to the status of a non-entity in the emotional life of the masses when they seek a political identity or exercise political choice. The problem, however, is by no means a purely political one. It is actually a societal

problem. It is a question of the relation of the individual to an entity larger than himself, to a vision of life and of the future which comforts and stimulates.

the Indianisation !

To a large extent and for a considerable time the freedom struggle did give the average Indian that larger entity and vision which pulled him beyond religion, caste and region. The misfortune was that these more parochial pulls also persisted and now threaten to overwhelm a fluctuating nationalism. The Indianisation of all of us was incomplete and remains so.

It is this Indianisation, this pull of India that has now to be stimulated in every possible way. It is a reality in the making, a pole of attraction which is feasible to draw vast millions towards a goal of all-round progress and a path to a socialist future.

While this Indianisation of all of us cannot be built on anti-religious foundations, it has at the same time to be an alternative and eventually supplanting form of popular consciousness to the religious consciousness. India cannot survive as a theocratic state. It cannot survive if the primary loyalty of its citizens is towards their particular religion.

Iqbal had put it very well when he wrote those immortal words, *"Hindi hain hum! Hindi hain hum watan hain, Hindustan hamara !"* From being first Hindu to being first Hindi, from being first Muslim to being first Hindi and so on—such must be the movement forward in India.

While it is most important that the Hindus become Indians, this does not minimise the importance of Muslims, Christians, Sikhs and others also becoming so. The disruption of India can come quite as much from the fanatics and fundamentalists of minority religions as from their Hindu counterparts. We realised this too late in 1945-47. The tragic mistake must not be repeated.

Within this broad framework of Indian nationalism the true conflict can commence for the *winning* of India—the conflict of the classes, of the working people against the parasites. But to win India we need at first to have an India. □

(Continued from page 33)

senseless violence. Here again we do not stop to think and ask questions about the cause. At best, we indulge in fire-fighting operations. What is needed is an attitudinal change.

All human actions are motivated by desire for happiness. Happiness must be distinguished from mere pleasure. Man has learnt from experience that having material provisions that make him fulfil his wants makes him happy. But he also knows by the same experience that excess of the physical or material wants like eating too many sweets or chocolates because they are pleasing to the palate, cause more suffering, pain and unhappiness. Hence, he has found that happiness is a more stable and lasting state of mind which comes from creative faculties, from acts of achievements in which other fellow human beings are benefited, nay, even from activities where one tries to understand and find harmony with other creatures and even nature itself. He has learnt from experience that acts of love and sacrifice for others—which is called a noble cause—give him so much satisfaction and happiness that he is willing even to give his life for it. After all the most basic desire in a being is the desire to live. Happiness, therefore, comes more from a sensible discernment of the physical wants and from knowing what gives greater joy—and deeper sense of fulfilment that comes from humour, music, dance, poetry, literature and other arts as well as from sports, adventure and mere information and knowledge of all that he sees, he feels and wants to know.

The one more emotion that leads to lot of nonsense is the so-called pride and ego. Self-confidence is good because what one thinks of himself is self-respect; what others think of him is his honour. But when what one thinks of himself is in excess of what others thinks of him—then that is ego. It is this ego, whether of an individual or people in authority in any field that is the cause of great deal of nonsense creating various gaps in communication causing lack of understanding, harmony and peace. These persons who suffer from ego always wear a mask and that becomes the first obstacle in communicating with them. These are the worst causes for most of the nonsense in social relationship. In both these fields dealing with emotions, it is only when they are tempered by reason that they become conducive to well-being and harmony in human relationship and lead to establishment of certain universal values.

I sincerely hope that this issue of YOJANA will at least stir the people to think and question. I will conclude by reproducing the sentences which I have quoted in my book, Towards Social Revolution, viz.,

Those who refuse to think are bigots,
Those who cannot think are fools, and
Those who dare not think are cowards;

and also the famous saying of one of the greatest rationalists and thinkers, Jawaharlal Nehru, who said : "Success often comes to those who dare to think and act. It seldom goes to the timid". Let this scientific temper of enlightened humanism prevail!

Let's at least act now to fight revivalism !

P.C. Joshi

The concept secularism, says the author, is the product of our struggle for freedom and is the bedrock of country's unity. He warns against the growing schism between the vision of a secular unified India and the grim reality of gradual erosion of the design of Indian secularism. Our leadership, he adds, must now learn to behave and act to defend secularism against the onslaught of fundamentalism.

AMONG THE DEVELOPING COUNTRIES India is distinguished by its proclaimed commitment to secularism as the guiding principle of State policy and action. Indian secularism is not just an intellectual abstraction, nor a product of theological and academic debates only. It acquired flesh and blood, a moral depth through the sacrifice and martyrdom of stalwarts of the freedom struggle and of countless unknown Indians who stood up for secular nationhood at moments of the gravest national crisis. The history of such sacrifice and struggle has shaped the character of the secular tradition in India.

the secular idea!

Secularism was no doubt the intellectual child of Western Enlightenment and Reformation. India's cultural debt to the West is reflected in her assimilation of the concept of secularism via the West. But India was not introduced to secular theory and prac-

Why live with nonsense

tice by British colonialism. The colonial state was far from being a secular state. As part of its policy of divide and rule, it had mastered the art of exploiting one religion against another. Further, it did not consistently and vigorously pursue a policy of secularising Indian education and culture. The indentification of colonial rule with India's backward looking classes and social strata converted colonialism into a formidable constraint on secularisation of Indian society.

"The concept of secularism, if it is to serve as an instrument of national integration must not be treated as a static concept emphasising only the practice of religious tolerance. It must become a dynamic concept embracing the idea of actively promoting social and political change towards elimination of inequality."

The promoter of the secular idea in India was thus the wasternised Indian elite which derived inspiration from modern Western thought and specially from the English Industrial and French Political Revolutions. The secular idea grew from the historical compulsions and necessities of India's struggle against colonialism and her striving to evolve a unified national identity from its multi-religious, multi-ethnic and multi-lingual diversities.

in Nehru's words!

Jawaharlal Nehru sums up very lucidly the relevance of the idea of 'secularity' for Indian nationalism in the following words :

"In a country like India, which has many faiths and religions, no real nationalism can be built except on the basis of secularity. Any narrower approach must exclude a section of the population, and then nationalism itself will have a restricted meaning than it should possess."

Further :

"We have not only to live upto the ideals proclaimed in our Constitution, but make them a part of our thinking and living and thus build up a really integrated nation. That does not mean absence of religion but putting religion on a different plane from that of normal political and social life. Any other approach in India would mean the breaking up of India."

The concept of secularism as defined above is inseparable from the evolving concept of Indian nationalism. It is the product of the national struggle for independence and it was ultimately incorporated and embodied in the Constitution of the Sovereign Republic of India. The upholding of secularism then became the constitutional obligation of the Indian nation-state. It is clear that secularism grew not in the process of direct encounter with religion as in the West. It grew as an integrative force by trying to transcend religion and by drawing upon the constructive forces promoted by the secularisation process within religion itself.

Indian secularism also subsumed the idea of social and political equality. To quote Nehru again :

"We call our state a secular one. The word 'secular' is not a very happy one. And yet for want of a better word, we have used it. What exactly does it mean ? It does not obviously mean a state where religion is discouraged. It means freedom of religion and conscience including freedom for those who have no religion, subject only to their not interfering with each other or with the basic conceptions of our state. ... The word secular however, conveys something much more to me, although that might not be its dictionary meaning. It conveys the idea of society and political equality. Thus a caste-ridden society is not properly secular. I have no desire to interfere with any persons belief but when those beliefs become petrified in caste divisions, undoubtedly they affect the social structure of the state. They prevent us from realising the idea of equality which we claim to place before ourselves"

a dynamic concept!

In other words, the concept of secularism, if it is to serve as an instrument of national integration, must not be treated as a static concept emphasising only the practice of religious tolerance. It must become a dynamic concept embracing the idea of actively promoting social and political change towards elimination of inequality. Nehru thus evolved a design of promoting secularism through social transformation and development.

In the pre-independence period the battle of secularism was fought on the political plane by promoting the involvement of all sections of Indian society in the freedom struggle. It was also fought on the cultural plane by re-interpreting the cultural heritage of each religious community so as to bring into prominence the integrative and dynamic processes within each culture and by strengthening bridges between them. In the post-Independence period the battle of secularism assumed a new character; it was taken to the economic, social and educational planes. The involvement of the people of all communities, specially

"Discerning and sensitive Indian are shocked and alarmed by the recent threats to secularism which have assumed massive proportions. It is pertinent to ask : Why this schism between the vision of a secular unified India as enshrined in the Constitution and the grim reality of gradual erosion of the design of Indian secularism?"

e deprived classes, in development became an in-spensable condition of promoting secularisation.

Discerning and sensitive Indians are shocked and armed by the recent threats to secularism which have sumed massive proportions. It is pertinent to ask hy this schism between the vision of a secular, uni-d India as enshrined in the Constitution and the im reality of gradual erosion of the design of Indian cularism ? It is distressing to find the vast masses ing confused by the anti-secular ideological offen-ve. Much more disquieting is to find the Indian ite at all levels still not aware of the vast dimen-ons of the challenge of secularism. They have yet mobilise all the instruments of the nation-state to anslate this secular vision into policy prescriptions r concerted State and social action in the economic, cial, cultural, educational and political fields There a wide communication gap between the secular ele-ents of the intelligentsia and the masses which im-ies that the masses are exposed to the ideolo-cal offensive from anti-secular forces without any unteracting approach and mobilisation by the secular rces.

a close look required !

In the above background a fresh examination of e concept of secularism in the light of historical perience, contemporary social processes and fun-mental value premises of the Indian Constitution the need of the hour. The anti-secular offensive n be resisted only by a nation-wide dialogue and bate among people representing all points of view

The important point to note is that this national bate and dialogue must not exclude elements which e rooted in the religious approach and which derive eir inspiration from the religious world-view In ct, the national debate and dialogue will assume a de national character and sweep only if it encom-sses elements belonging to all the religions of India.

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he absence of a conscious and well-thought out proach toward religion has resulted in accretion of emendous strength to negative tendencies in the reli-ous sphere for instance to those of obscurantism, alism, hostility between religious groups."

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must further be noted that the secularisation process s evolved in India not only in the form of intel-ctual encounter with and against religions, specially ainst certain obscurantist and retrogressive features religion. One of the fundamental aspects of secul-isation has been the encounter between the retro-essive and progressive within religion itself. The cularisation process within religion can be seen in e encounter between Brahminism and Buddhism, between forces of religious bigotry and social rigidity and the forces of social emancipation released by the Bhakti Movement in the medieval period. It can be seen in the rise of secularising movements within religion in the modern period led by saints and sages like Swami Vivekanand and Mahatma Gandhi.

these two streams !

We must take note of the mechanical equation of secularisation with opposition to religion by the modern elite. The ignorance of the secularisation pro-cess within religion on the part of the modern elite has created a vast hiatus between the secular forces deriving their inspiration from modern Western thought and those rooted in the Indian Religious Re-formation. This hiatus has been a source of weakness of Indian secularism specially in the post-Indepen-dence period. Without bridge-building between these two streams of Indian secularism, the ideological offensive of the antisecular forces cannot be effec-tively counteracted. Without the powerful support of the religious Reformers of all religions, the secular forces of the nation-state and of the modern intelli-gentsia cannot reach the vast masses of India for whom religion, interpreted in the widest meaning of the term, still provides not only a philosophy of life but also the categories of understanding and com-munication. So far as the vast masses are concerned, the secular message must acquire an intelligible Indian form in terms of Indian images, symbols and meaning patterns The failures of Indian secularism arise from the lack of the rootedness of the modern elite in the Indian cultural traditions which, to a large extent, means the Indian religious traditions. To ignore that Indian religious and the Indian culural traditions are closely intertwined is to ignore basic historical and sociological facts and processes.

"To highlight the positive potentialities of religious reforms is not to under-estimate the danger from re-ligion in its present form. This means an unrelenting fight against such features of religious thought and practice which disorient the consciousness of the peo-ple and which impede the effective implementation of social reforms".

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and the suggestion !

From this prospective the entire religious world-view must not be treated as intellectually obsolete and practically irrelevant and retrogressive. The pos-sibilities of creative re-interpretation, adaptation and renewal within religion must be explored so as to promote compatibility and complementarity between religious conception and prescription on the one hand and progressive social and political action on the other. Just because religion has become obsolete for

the modern educated class, or a part of it, it must not be assumed that religion has become obsolete for the vast masses. The battle against false religiosity and superstition and against the alliance between vested interest and religious obscurantism should not be equated with battle against the entire religious tradition. Religion is much deeper and wider than the part which is tapped by the fanaties and the fundamentalists. The absence of a conscious and well-thought out approach towards religion has resulted in accretion of tremendous strength to negative tendencies in the religious sphere, for instance, to those of obscurantism, fatalism, hostility between religious groups, political and economic exploitation of religious loyalties and sentiments, accumulation of privilege and property by religious institutions and their exploitation for socially retrogressive purposes, etc. The neglect of the religious question has also meant decline and decay of the positive concepts and constructive forces within religion which gave primacy to values and morality, to compassion and humanism, to cooperation and service and which acted as a powerful check on individualism and acquisitiveness. Within the religious tradition are locked up deep reserves of idealism and social energy directed to the collective good which, if tapped, can be a powerful force for promoting national integration and egalitarian development. Any conception of secularism which is ignorant of the positive potentialities of the religious cultural heritage, and which is disinclined to tap it for realising the basic values and motivations underlying the modern secular idea, requires serious reconsideration and fundamental reformulation.

"The more effective the strategy in eliminating backwardness on the one hand and inequality and exploitation on the other, the greater the successes in meeting the challenge of the anti-secular forces"

religion, its exploitation!

To highlight the positive potentialities of religious reforms is not to underestimate the danger from religion in its present form. This means an unrelening fight against such features of religious thought and practice which disorient the consciousness of the people and which impede the effective implementation of social reforms and development programmes in the interest of the down-trodden and the underprivileged.

We must not ignore that religion has been and is being exploited for thwarting reforms and for preventing the unification and organisation of the toiling poor by powerful vested interests. The most effective way of preventing this alliance of religious fanatics and vested interests from spreading their influence among the poor and the underprivileged is to accelerate the process of mass-oriented development and the implementation of urgent social reforms. The cause of secularism has suffered the most by the failure to effectively involve the masses in the processes of development and social reforms and to take the message of literacy, education and enlightenment to every home and to every member among the deprived and the under-privileged.

Past and present history tells us that the cause of secularism has suffered serious reverses whenever the modern forces have adopted a strategy of direct attack on religious conceptions, institutions and authorities. In contrast, the strategy of indirect encounter with forces of religious obscurantism through active promotion and acceleration of development processes has paid very rich dividends by eroding the social and economic base of these forces. It must be noted that the soil for the growth of these forces is provided by backwardness on the one hand and inequality and exploitation on the other. The more effective the strategy in eliminating backwardness on the one hand and inequality and exploitation on the other, the greater the successes in meeting the challenge of the anti-secular forces.

and its allies!

In other words, development processes which promote not equality but inequality, not justice but exploitation, are the best allies of the forces of religious obscurantism and fanaticism. In many developing countries class-biased development policies adversely affecting the masses have helped not the growth of secularism but anti-secularism. Secularism, development and social justice are thus indivisible We refer here to a very perceptive observation by Eric J. Hobsbawm who shows how in England and France during the age of Revolution, there was a return to "militant, literal, old-fashioned religion." Explaining this religious revival, Hobsbawm observed :

"For the masses it (i.e. return of religion) was in the main a method of coping with the increasingly bleak and inhuman oppressive society of middle class liberalism. In Marx's phrase (but he was not the only one to use such words) it was 'the heart of a heartless world, as it is the spirit of spiritless conditions... the opium of the people.' More than this : it attempted to create social and sometimes educational and political institutions in an environment which provided none and among politically undeveloped people, it gave primitive expression to their discontents and aspirations. Its literalism, emotionalism and superstition protested both against the entire society in which rational calculation dominated and against the upper classes who deformed religion in their own image."

To the extent our development patterns reproduce some of the oppressive conditions and features depict-

above, they also promote the growth of religious ivalism and obscurantism. The latter cannot be sted without altering the oppressive patterns and ditions of development which provide a favourable . for the growth of these anti-secular ideologies.

this real obstacle !

And finally, it is in the realm of politics, that is, in realm of mobilisation of political support or votes a democracy, and in the realm of management of e institutions, that the principle of secularism en- nters the most formidable obstacles. Political sup- t in a democracy can be mobilised either by ap- ling to the enlightened self-interest and progres- : urges and aspirations of the people or by tapp- their primordial instincts and loyalties and their alty to retrograde customs and social practices. ilarly, those in charge of the institutions of state ver, can either maintain total independence from gious partisanship and pressures and resist being loited by powerful pressure groups; or they can, acquiring cheap popularity and for other short n gains and interests, allow the state apparatus, or ir position within the state apparatus, to become an rument of appeasement of vested interests and s be guilty of sacrificing the long-term interests of nation and society. Behind every tragedy that has befallen the nation at different times, there is a history of compromises and surrender of principles at all levels especially at the highest levels. In view of this experience it seems appropriate to assert that the strength of secularism ultimately depends on the quality of human agents on whom rests the responsibility of safeguarding the spirit of secularism through their policies and actions in different fields of national life specially at critical moments.

The following remarks of the French political thinker, A. D. Tocqueville, are very apt in our situation emphasising the importance of the leadership and of the quality of leadership in a democracy. To quote :

> "When occasions present themselves in which the interests of the people are at variance with their inclinations, it is the duty of persons whom they have appointed to be the guardians of those interests to withstand the temporary delusions, in order to give them time and opportunity for cool and sedate reflection. Instances might be cited, in which a conduct of this kind has served the people from the very fatal consequences of their own mistakes and has procured lasting moments of their gratitude to the men who had the courage and magnanimity to save them at the peril of their displeasure."☐

(Continued from page 30)

flicts. It is not, therefore, any religion per se ich is to be attacked but it is the social and itical functioning of organised religion or even rganised religion which must be viewed with reme suspicion. In this view of the matter, religion religious feelings or spiritual needs of individual nan beings can be and ought to be a matter bet- n him and his own conception of the sacred and divine. It is the mixing of State Politics and Reli- n that some of the most poisonous brews have been de and continue to be made converting human ngs into just glorified assassins in the name of gion. If one looks at the matter in this light, the assin of Abraham Lincoln was not a true Chris- any more than the assassin of Gandhi was a Hindu or the assassin of Indira Gandhi were the followers of the great Gurus. All these examples examples of human bestiality expressing itself the name of false religion.

Q. : Would you kindly suggest some effective ways to make our bureaucracy work actively for promoting humanism and rationality? There is hardly any better way to improve quality of life. Don't you think the government-controlled media has some special role to play? . .

P.N. Haksar : I am afraid, a lot of people in India nk that brureaucracy as such can by itself bring ut what was ardently desired. Bureaucracy does hang in mid air. Its members have grown out of existing society and then put together in a system whose morals and manners cannot be very different from the morals and manners of their political bosses or of the section of society from which they are drawn. Bureaucracy as a system is an instrument not so much for changing as for maintaining a system with efficiency and integrity. Your expectation that bureaucracy can improve the quality of life is to say the least is rather naive.

As for Government-controlled media, certainly, if it is to justify itself, it must become live and creative and if used with imagination and creativity, it can be one single source of Renaissance and Reformation in our country. There is one tradition in our country of which I am very proud and that is to settle disputes by means of Vad-Vivad. Our radio and television are emaciated and emasculated when one compares what they produce as a so-called programme with creative potentialities of artists, writers, scientists and other creative thinkers. The only thing which radio and television have succeeded in doing is to whet consumer appetite of people and therefore are as single source of turbulence and decay of morals and manners. There is nothing original about television and radio programmes; everything is borrowed and nothing corresponds to our real needs. In the meantime our poor satellite continues to be in its geo-synchronous orbit with hardly and worthwhile software to feed it with.

This last observation of mine is an apt illustration of our proverb that an elephant has two set of teeth, one for merely showing and the other for eating.

Humanism alone would see us through !

S. M. Joshi

The author, a veteran Gandhian Socialist, now, unfortunately bed-ridden, laments at our failings to be "true" Gandhians in our thoughts and actions. He ascribes all the turmoil we live with today to our forsaking the Father of Nation and his teachings of truth, non-violence and social justice. If we really mean forging national unity, we must, he adds, take to promoting humanism which has to be the sheet-anchor of our life.

OUR COUNTRY IS PASSING THROUGH A VERY GRAVE CRISIS endangering national unity and territorial integrity. Stability is threatened and progress is hampered by the growing terrorism, casteist and communal violence. On the top of all this, corruption at all levels is eating at the very vitals of our social life disregarding all human values

Every right thinking person, who calls himself an Indian, must pause and ponder as to what is his or her duty at this critical juncture. It is no use pointing accusing finger at others. If the lights are turned inwards it could be easily realised that we have forsaken the Father of the Nation and his teaching truth, non-violence and social justice. Every on trying to pursue naked self-interest and in that cess truth is the first casualty. Untruthful behav is the beginning of corruption and eventual disi gration of the society

the cementing for

Social nature of man keeps the society integra Innate love of man for other human beings is main cementing principle in every society. Hatre others is only secondary. It is this fact of life

Why live with nonsense

Gandhiji appealed and urged upon us to accept truth and non-violence as the creed of the Indian National Congress. National unity could be realised and any threat to our territorial integrity effectively met if we accept Gandhiji's teachings in this respect even today Armed forces could be useful to preserve territorial integrity but guarantee of national unity lies in the unity of our hearts.

Spread of terrorism along with casteist and communal violence is very dangerous from the point of

"If the lights are turned inwards it could be easily realised that we have forsaken the father of the nation and his teachings of truth, non-violence and social justice. Every one is trying to pursue naked self-interest and in that process truth is the first casualty".

view of national unity. Use of force to curb it is not the only answer. It might bring back normalcy, but it would last for a short period. The only and permanent remedy lies in rekindling in the hearts of our people the innate instinct of love for other human beings. After the attainment of national independence, we have allowed that instinct to erode. It is undisputed that placed as we are, we must live together. There is no other go. If we live together as the members of one family we will be able to achieve progress and happiness. Communal strife will end in destruction of ourselves and national disintegration. Mahatma Gandhi with his humanistic approach becomes more relevant today than ever before

Despite partition, India remains a multireligious, multilingual, and multi-racial society Consequently, on the attainment of political freedom, our Constitution had to be framed on the principles of democracy and secularism. Initially the word secularism was not used but it was clearly reflected in the fundamental rights and the directive principles. Subsequently, in the year 1976, by a Constitutional amendment, words secularism, democracy and socialism were added to the preamble.

these road-blocks!

Indeed, six Five-Year Plans have laid the foundation for a new socio-economic order. But the growing casteist and communalist violence are putting roadblocks in making further progress on the road to development more or less impossible. Probably a caste-cum-class is inevitable in view of the vested interests resisting social change even with violent means. It seems that the down-trodden and the exploited will not get justice without a long drawn out struggle. They will have to fight for it. Their struggle under the circumstances will have to be carried on with peaceful and democratic means. They cannot afford to use violent methods with success. If they do so, the vested interest will be provided with an excuse to crush them down with violence both private and that of the state machine which is at their disposal. Mahatma Gandhi has given us in the form of Satyagraha a non-violent equivalent of war—the precious heritage of the down-trodden and the exploited.

As the national unity and territorial integrity is a must for our survival as a nation, it is essential that a consensus is developed as to the means to be used in our struggle for justice. It would be in the interest of the nation for both sides to pledge themselves that they will not use any other means other than peaceful and democratic.

and the endeavour!

During our struggle for freedom, our national leaders tried their best to convince their followers that Indian people irrespective of their religion, caste or language have to fight unitedly if they want freedom and development. Lokmanya Tilak did not put his signature to the Lucknow pact thoughtlessly. He was farsighted enough to see that the two great communities of Hindus and Muslims have to work together if they really aspire to be free from the imperialist yoke.

Mahatma Gandhi in his book 'Hind Swaraj' had stated in clear terms that "Indian nationalism is not based on religion, language or race. Millions of Indians believe in different faiths and speak different languages and yet they are living together for centuries as one society and they will have to do so in future also. Not only are they living together but they have developed a composite culture of which

"The only and permanent remedy lies in rekindling in the hearts of our people the innate instinct of love for other human beings. After the attainment of national independence, we have allowed that instinct to erode".

they are proud. They have succeeded in keeping unity in diversity."

After the death of Lokmanya Tilak in 1920, Gandhiji came to the helm of affairs of the Indian National Congress—wedded to legitimate and peaceful methods for the realization of its national objective. He gave to the people of India his famous method of Satyagraha and a nation-building programme. It included among other things Hindu-Muslim unity, removal of untouhability, develop-

ment of Hindi as the national language and Khadi as a symbol of Swadeshi. He insisted that the needs of the last man in the queue must be given priority above all. He undertook his famous fast unto death as a protest when the British Government awarded separate electorates for the Scheduled Castes. However, he was not allowed to die. Dr. Babasaheb Ambedkar was great and noble-hearted enough to reach an agreement with Gandhiji providing joint electorates with reservation of seats, and saved his life for the country and in the interest of humanity as a whole.

In the year 1934, Mahatmaji wanted to amend the Constitution of the Congress and replace the words in its creed "legitimate and peaceful methods" by "truthful and non-violent methods". His insistence was on unity of means and ends. National unity in the real sense of the term could not be achieved except through truthful and non-violent means, he asserted. But when he found that a vocal section of youths was not agreeable to the change, he dropped the idea without a fuss. After that he did not enlist himself as a member of the Congress. Even so he continued to guide the Congress in the hoper of need. He was their friend and guide but not their philosopher. They accepted his principle of non-violence only as a policy and not as creed. At the most crucial stage of our freedom movement when the leaders agreed to partition the country, they did not take his guidance.

"If we are serious about national unity and integrity, we cannot afford to forget and give up our precious heritage. Compassion an dlove of human beings are eternal human values and could be ignored at our peril".

the gradual erosion !

It is true that Gandhiji had a number of followers in the Congress, particularly those dedicated to his constructive programme; that programme served as an effective instrument of education and social change so long as his guidance was available. When Congress came to power most of these constructive workers looked to the assistance and guidance from the ruling party with the result that the original dynamic quality of theirs was eroded in course of time. It became mechanical and failed to inspire the younger generation. Acharya Vinoba Bhave tried to inject the dynamism by his Bhoodan Movement but it proved to be just a temporary phase.

At the time of transfer of power Gandhiji's gospel of humanism and brotherhood had not permeated in all the communities and classes of people or else the country may not have been partitioned. Partition, however, could not solve the problem of Hindu-Muslim unity. With crores of Muslims still remaining in India, the problem became all the more difficult; the Hindus could not forget that they had supported partition. But the complex problem had to be faced and solved in the interest of future generations both in India and Pakistan. Teachings of Gandhiji could not be disregarded for all times. Our Founding Fathers under the Constitution bestowed equal rights on all those who lived in India irrespective of caste or religion. Only that way India could exist and prosper as a nation. Gandhiji had visualised it in his 'Hind Swaraj'. We call it secularism and democracy. "Indian State has to be a secular state and the coercive powers of the State will be exercised only by the State. No other institution, religious or otherwise, shall be allowed to usurp that function which belongs exclusively to the sovereign authority of the States".

all teachings ignored !

When the Congress came to power the lofty ideals remained only in the Constitution. Teachings of Gandhiji and the human values were gradually ignored. The higher castes and the possessing classes who got into the positions of power started caring more for their vested interests in the established unequal order than the provisions of the Constitution and the human values enshrined in the Constitution. We witness today the sorry spectacle of higher castes opposing the policy of reservation in services for the backward classes and the Scheduled Castes and Tribes Unfortunately, in their resistance to reservation they have thrown to the winds peaceful methods by indulging in arson and violence. No wonder that violence once let loose culminates in communal violence creating hatred instead love. It is all the more regrettable that in their demand for justice a section of the Sikhs is openly preaching collection of arms and its use in the name of the Great Guru Gobindsingh

In this fashion the monster of terrorism and communal violence is raising its ugly head. If it is allowed to spread its tentacles far and wide, civil life would be almost impossible All our talk about planning for development and a new egalitarian social order would be reduced to utter nonsense. In a situation like this, Mahatma Gandhi becomes all the more relevant. Did we accept his leadership in our struggle for independence just by way of expediency? Now that the higher caste and classes entrenching themselves in the position of power have started to use violence to preserve their vested interests, it is high time that Gandhiji's teachings are resurrected. If we are serious about national unity and integrity, we cannot afford to forget and give up our precious heritage. Compassion and love of human beings are eternal human values and could be ignored at our peril. Humanism as the basic principle of our nationalism has to be accepted by all whether one believes in God or not. That has to be the sheet anchor of our life and the corner stone of the new egalitarian socio-economic edifice. No efforts could be spared to reach a national consensus on that issue. □

Religion is the greatest divider of men !

P.M. Bhargava

top of the problem

have the following theses :

(i) In the hierarchy of problems that face our country today, there are at the top : *education, water* and *power*. If we solve these, the other problems will, probably, get solved automatically. It will be at any rate difficult to prevent their implementable solutions emerging. And, if we *do not* solve these problems, no other problem is going to be solved on a permanent basis.

(ii) We, as a nation, are not only *not* truly committed (lip service not counted) to solving these problems, our power elite of all kinds (with *individual* exceptions, of course, which are generally not effective) is not interested in solving them because of the irrationality and self-interest which guide their lives.

(iii) We constantly talk of solutions, but mean and implement only cosmetic solutions—glue (cheap, water-soluble) and cellotape variety. Somewhere, someone gets relief for a shortwhile and we gloat over it, and make political capital out of it as if the problem is really solved for good. We rarely scratch the surface of the problem, and if it does get scratched inadvertently, we turn our eyes away ("not fit for kings to look at"). If, indeed, we did probe beneath the surface there would be a new scandal every minute (or so), *a la* Antulay or the recent spy scandal. Indeed, superficiality is a creed with us. In which other country will we have a non-scientist professional civil servant replacing a distinguished scientist who had done extremerely well as the Secretary of the Federal Government's Department of Environment; and in which country would you have IAS officers as Vice-Chancellors of universities. If only the salary and the grades of university professors were high enough, and had they commanded power and prestige (as indeed they should), I have no doubt that the civil servants in our country would also demand that they must be made the heads of university departments, to be transferred from month to month or year to year from one department to another, say, physics to politics !

(iv) The solution to the above-mentioned three problems stare at us in our faces. We can "lick" them but our social, political and economic compulsions prevent us from doing so.

In such a situation any talk of our truly entering the 21st Century on 1st January, 2001, would make little sense. The talk would, of course, have made a lot of sense if we *had* decided to tackle the above problems with grit, determination and realism.

Why live with nonsense

Why have we lived with such nonsense so far ? Perhaps, because we haven't diagnosed the disease, or realised how debilitatory it is for the nation. Even when a realisation has been forced upon us, we have deliberately done nothing about it. If we did, we as individuals, would lose our privileges. Our recent history substantiates the view that whenever there has been a conflict between interests of the country and our own individual class interest, the latter has almost always gained precedence. We can, then, only *hope* that once we have diagnosed the disease, we would cease to be so charitable towards such nonsense, brace ourselves to face reality and do the job, and enter the 21st century with pride and hope. So let us look at the reasons—*some* reasons—for our immense tolerance, if not deliberate acceptance, of so much that does not make sense.

"Why have we lived with such nonsense so far? Perhaps, because we haven't diagnosed the disease or realised how debilitatory it is for the nation. Even when a realisation has been forced upon us, we have deliberately done nothing about it. If we did, we as individuals, would lose our privileges".

some reasons !

We are a badly and sadly divided lot. We are divided on the basis of religion, caste, sect, language, social status, food habits (I have sat on Selection Committees where candidates have asked for transfer from one place to another in the *same* position because they have not been able to get adjusted to food at their present place and would, therefore, like to go back to their "native" place), customs, convention, tradition, access to education and information, origin (the place where we come from), financial status, and what not. No country has ever faced such a situation in all of history. We could have used this variety as a spice of life; instead we have used it to spite others.

Let us see how badly we are divided on the basis of religion and education—to take two examples.

religion only divides us !

Religion by its very nature divides people. And by religion I mean the total package of values, dogmas and irrational beliefs which cannot be scientifically substantiated—religion as it is stated in its scriptures and/or practices. Religion bereft of dogma and irrational belief ceases to be religion—it becomes, in the least, humanism which transcends all religion and strips them of their identity, for ethical and moral values of all religions show a virtually total overlap. Let us [illegible] a little more [illegible]. We are the largest Hindu nation in the world [illegible] the second largest Muslim nation in the world coming only after Indonesia. We have more Christians than the total population of Australia, and more Sikhs than the combined population of Norway and Sweden and, of course, a smattering of Buddhists who practise a religion which was born here, and of Parsis

Then, amongst the Hindus we have sects like the Jains, and castes and sub-castes. You may not marry outside of your caste, or within the same Gotra even if you belong to the same caste. Then we have people who are outside of the caste system—the so-called Scheduled Castes—and the tribals. And then, there is hierarchy amongst, for example, the Brahmins themselves.

Amongst Muslims we have the Shias and Sunnis, not to speak of the followers of the Agha Khan and sects that are not recognised by the fundamentalist Muslims as Muslims at all. Among the Christians we have the Catholics and the Protestants, and all the possible denominational ramifications within them

everybody against somebody !

And everybody is in conflict with somebody who is religionwise different. Irrational difference, biases and emotions arising out of religion or its dictates, have been the main cause of internal conflict and bloody strifes in the country in recent times. The Brahmins have fought the non-Brahmins; the caste Hindus, those outside of the caste system; the Hindus, the Muslims; the Shias, the Sunnis; and now the Sikhs are holding the whole nation to ransom. The point that has not been appreciated is that where there is such a total surrender to the irrationality and dogma of religion, such conflicts are absolutely inevitable and unavoidable. Lasting amity is not possible amongst true believers in different sects of irrational beliefs As fundamentalism (strict adherence to the dictates of religion) in religious practice decreases in a multi-religious society, the society would move nearer to true amity.

"Religion by its very nature divides people. And by religion I mean the total package of values, dogmas and irrational beliefs which cannot be scientifically substantiated—religion as it is stated in its scriptures and/or practised. Religion bereft of dogma and irrational belief ceases to be religion—it becomes, in the least humanism which transcends all religion and strips them of their identity, for ethical and moral values of all religions show a virtually total overlap."

Indeed, in other words, as long as we continue to seek a strong and dominant religious identity (and that is, the first identity that a true believer, unfortunately, seeks), religion-based conflicts are inevitable and there is very little one can do about them. You suppress

them (the conflicts) at one place and they would erupt somewhere else. Religious tolerance alone amongst highly religious people is thus bound to fail as a long-term strategy to prevent conflicts. It has certainly not succeeded in our country. It can at most lead to a superficial skin-deep amity amongst people which would turn into animosity at the slightest perturbation. All this is so because religions are mutually totally exclusive except in terms of their moral and ethical value system which is the same in all religions and forms a trivial part of everyday rreligious practice. If two objects were to occupy the same place at the same time, there is bound to be a clash. So, religion is the worst divider. History confirms this. All amity between staunchly religious people belonging to different religions in history, has been transient and superficial. The seeds of conflict have always been there, which often sprout at the slightest perturbation.

and this hypocrisy!

We seek reflected glory from our religious identity as we believe that our religion (whatever it may be). is "the greatest". If we didn't think so, we would not seek to convert people which many religions do A staunchly religious person cannot and does not have true respect (that would have roots in the inner-most recesses of his heart) for a person belonging to another religion. Any talk of such respect is often hypocrisy because of genuine contradictions between various religions. I, as a practising biologist and one without any religion, certainly cannot have much respect for a creationist (that is one who believes that man has been put on our planet as man, following an act of deliberation by a supernatural power), for modern biology and creationism are mutually exclusive.

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As I have mentioned above, other dividing influences, such as language, state, social status, educational status, and food habits, too, exist in our society, but as generators and sustainers of conflict, they are nowhere near as important as religion. You can easily learn to appreciate another language and even speak it for most of your time; many do so. Most of us admire Sharat Chandra, Shakespeare and Premchand, irrespective of what our mother-tongue might be. The social status of people can and does change, and the same could be true of the educational status too. Food habits certainly are becoming much more cosmopolitan all around the world as time goes by and one can enjoy, even in our country, more than one kind of food.

Similarly one can today think of two (or more than two) places geographically widely apart, as his home. In fact, in the case of all other dividing influences, like the ones I have just mentioned, one can find a whole spectrum represented in a group of individuals. In the case of religion, by contrast, either you do or you do not belong to a religion; you certainly cannot belong to two religions—not even to two sects or castes or sub-castes in the same religion. There is nothing in-between. It is not like speaking good Telugu, not so good Hindi, and understandable Tamil and Malayalam, and liking the writings in all the languages. I know of a case where the mother-tongue of the father is Tamil, that of the mother Marathi, and the only Indian language that the children speak is Hindi, and all this has come about naturally without rejection of any language by anyone in the family. This would be impossible in the case of religion. Religious dogma blackens one's existence so totally that no other colour or hue, no matter how pleasant or useful, would go on it.

"We seek reflected glory from our religious identity as we believe that our religion (whatever it may be), is "the greatest". If we didn't think so, we would not seek to convert people which many religions do. A staunchly religious person cannot and does not have true respect (that would have roots in the inner-most recesses of his heart) for a person belonging to another religion. Any talk of such respect is often hypocrisy because of genuine contradictions between various religions".

Another problem with religion, as it is practised, is that the practices that distinguish one religion from another are based on total irrationality. There cannot be a dialogue or meeting ground between two irrationalities. So, again, we come to the same conclusion that religion is a great—perhaps, the greatest—divider of men.

education too is the culprit!

It is one of the greatest tragedies of our country after Independence that education which, indeed, should have been *the* strongest emancipating force, has become the greatest tool of exploitation. In fact, the most *unfortunate* division in our country is not on the basis of religion, caste, etc., but on the basis of education. We have two classes: the educated and the uneducated, and these classes tend to retain their identity over generations as education is, for

all practical purposes, a hereditary affair. We have fifteen to twenty million people belonging to the educated or the "privileged" class. This would mean approximately two to three million small families and half a million or so large families, in a country of close to 700 million people. In this group, every child shall go to school, shall pass through high school, enter college, go to the university, get a degree and get a job. The same would be true for their children and grand-children and great-grand children, as has been so with the preceding generation. Education, indeed, runs in a family, and runs inevitably; whether the person deserves to go to a university or not is totally immaterial.

"Another problem with religion, as it is practised, is that the practices that distinguish one religion from another, are based on total irrationality. There cannot be a dialogue or meeting ground between two irrationalities. So, again, we come to the same conclusion that religion is a great—perhaps, the greatest—divider of men".

On the other hand, in the remaining 680 million people, representing 97 per cent of our people, the chances are that a child, even if enrolled in Class I would not be able to go to school, or drop out at Class 3 or Class 5 or Class 8. Even if he somehow gets through high school, he wouldn't get good marks, and wouldn't be able to compete for entry into a college because the school to which he went did not have the facilities that the children of the privileged (educated) class had in their schools and homes. Even if he did go through college and somehow get a degree, he would have difficulty in getting a job. There are, of course, exceptions and, when they happen, they are talked about in the newspapers (for example, that a Scheduled Caste person "topped" in the Indian Administrative Service Selections) In my estimate not more than 10,000 people leave the second group (of the unprivileged) to enter the first group (of the privileged) every year. This changes the complexion of neither group, and the distinction continues generation after generation.

There is indeed little social communication between the two groups. Their economic interests also clash, and they are constantly at war with each other: the privileged educated elite and the unprivileged uneducated masses. After Independence we have, for all practical purposes, replaced the British by this educated elite. What is heart-rending is that we have practised this educational apartheid deliberately. It is incredible that a country with the resources, the commitment and the history that India has had, has not been able to provide adequate and appropriate education to all our countrymen in the four decades after Independence. We haven't done so *because we did not want to do so*. Having done so would not have been in the interests of the privileged class—the educated elite. The only saving grace has been adult franchise. So, at least once every few years we woo the unprivileged. During the rest of the period, we lament the lack of servants in our household as if it is our birth-right to have a class who can be exploited. We—the educated elite—engage in every possible nefarious practice-- bribery, tax evasion and name what you would, but we go up in arms at the smallest misdemeanour of the uneducated brethren.

As a consequence of the great divides I have talked about, our battles are fought between ourselves, to retain our identities based on the privilege we have had due to circumstances of birth or other similar circumstances which are not of our making. Where is, then, the time and the inclination to look at national problems.

and the solutions

Let us accept that there are no easy solutions. But some firm steps are obvious. Let me state them even though they have been stated by so many others before.

(a) We should nationalise school education

(b) We should evolve national curricula and syllabi, text books and teaching aids, which should be value-oriented. The values themselves should be objectively derived and have their base in humanism and science. In the educational system, religion should be treated scientifically, objectively and historically, and not reverently

(c) There should be only one category of schools in the country—the state-run totally non-parochial schools. Every child should have a right to admission in a school, and we should ensure that every child or young person between the ages of 5-6 and 16-1[illegible] is in school, and that every one of them has an opportunity of finishing high school and thus getting 10 years of formal education, beginning from class one (this would need roughly 500,000 high schools in th[illegible]

"It is one of the greatest tragedies of our country after independence that education which, indeed should have been the strongest emancipating force has become the greatest tool of exploitation. In fact the most unfortunate division in our country is not on the basis of religion, caste, etc., but on the basis of education".

country and 7.5-8 million school teachers. It is well within the means of our country to achieve this in a phased manner (certainly, within two decades).

(d) The total emoluments of school teachers must be revised. In a village, the school teacher must be the highest paid person. I wonder how many people realise that a school teacher works ever so much harder than a University Professor does. Further, wherever and whenever there has been a sound system of school education in any society or any country, higher education has always taken care of itself. Therefore, the role of school teachers is far more important than the role of those who teach at a college or university. Given this crucial role, and the load of work and the responsibility, there is no reason why a school teacher should, socially and economically, be subservient to a university teacher.

(e) We should be able to use modern technology such as satellite technology, in our schools. It would obviously be difficult to get 7.5-8 million good teachers but we *can* get a few hundred good teachers who can record programmes for transmission through satellite television to all our schools around the country. One such good programme could form the nucleus for ten times as much teaching even by average teachers, given adequate teaching and other educational aids which we can devise, design and provide. (I have elsewhere talked about how this could be done and what the economics would be, in details; See New Quest, 1979, Vol. 15, May-June, 147-158).

(f) The State should prosecute Godmen of our country such as Satya Saibaba of Puttaparthi who mislead people and do a tremendous amount of damage to their psyche and morale.

(g) The State, at all levels, must behave in a truly secular fashion; it must not become a party at any time to implicitly sanctioning and approving religious practice of any kind.

(h) All Government servants (ministers included) should be prohibited from taking part in any religious practice publicly.

We are surely not going to win in a few years, but by deliberately encouraging the development of objectivity, rationality and scientific outlook, and discouraging the incursion that religion has made in our public life, we would certainly help bring about a solution.

an apology

I started with the problems of education, water and power. I have talked only of education, as an example. It is the same irrationality and vested interests that have so far confined education as a privilege of the few, that have prevented us from solving the problems of water and power as well.

In the end, let us remember that, indeed, if we did solve these problems we shall have no one to exploit—no bonded or under-paid labour or household servants. Are we prepared for this ? If so, are we preparing ourselves for it ? □

"What is heart-rending is that we have practised this educational apartheid deliberately. It is incredible that a country with the resources, the commitment and the history that India has had, has not been able to provide adequate and appropriate education to all our countrymen in the four decades after Indepandence. We haven't done so because we did not want to do so".

All that stops the taughts to learn rationality !

Malcolm S. Adiseshiah

Education today stands mobilised as an active partner in this business of selling religions, says Adiseshiah, and to refashion it to root out nonsense in life is not an easy job. He gives a close look at various available options, including deleting of Article 30 (1) *and* (2) *of the Constitution which provides religious minorities the right to establish and run educational institutions of their choice. The endeavour as such will have a limited-role, he adds, and suggests overhauling the role of electronic media to make people live and act in secular ways.*

ONE of the problems facing us today, as it did at the time of the birth of the nation in the mid forties, is the role of religion in the political life of the nation. I believe that religion is one of the most intensely personal areas in a person's life. At the highest and most abstract level, it is the expression of one's relationship with ultimate reality, of the Being's relationship to Becoming. At the ordinary, every day level, it is expressed in acts of worship which can take many forms, such as work (e.g., the ancient adage, to work is to pray), serving fellow humans, particularly those in need (e g., Gandhiji's vision of Daridranarayan), as well as prayer and meditation (e.g., the reading of the Thirukkural every morning). The link between the abstract and the practical level is the system of morality embodied in

Why live with nonsense

the values of truth, non-violence, compassion and charity, which are simultaneously normative and part positive. Religion in these forms is perceived by different people in different ways, giving rise to religions.

the mischief begins!

Religions are institutionalised, each with its own scriptures and rites, and always with a claim to uniqueness. At this point, the intensely personal nature of religion breaks down, as there develops the desire to get others to accept one's religion. This

"Religions are institutionalised, each with its own sciptures and rites, and always with a claim to uniqueness. At this point, the intensely personal nature of religion breaks down, as there develops the desire to get others to accept one's religion. This proselytisation, the desire and urge to spread one's religion to others, is where the first friction beings".

proselytisation, the desire and urge to spread one's religion to others, is where the first friction begins. It is aggravated and becomes a kind of social sickness, where religion is used in business, employment, education, and, above all, to win elections in a democratic political system, or to acquire political power and stay in harness in non-democratic political systems. This is where the mischief begins, and spreads like wildfire engulfing all of society and all its facets—social, cultural, economic and political.

This intrusion and misuse of religion in all facets of political and social life, under which only those who belong to one's religion, (such as Islam in the case of Muslims), or sub-religion (such as Nairs of Ezhavas or eastern latin Christians in Kerala) or culture-cum-religion (such as the Hindu Munnnei Movement), are mobilised to support one's political ambition and career and are offered various employment, educational, and social facilities; this deterioration and exploitation of religion is called India communalism. (This use of the term 'communalism', is especially Indian as the word communal according to the Oxford English dictionary means 'relating to a commune, or to organisations in communes or of or belonging to the common people'—with no reference to religion or its misuse, which is the meaning of the term in India).

first from the home!

The communal virus starts from the home and is nurtured by religious groups and movements, by political parties and social and political groups and formations. Like the underground economy and unaccounted wealth and money, it has become part of the political process of the country. In fact, Article 30 of the Constitution, which gives religious minorities the right to establish and administer educational institutions of their choice has been used to pull in the mighty educational stream of the country in support of the many religions of the country. For while the religious minorities—the Muslims, Christians, Sikhs and Jains have organised themselves to establish schools and colleges which propagate their religions or their religious culture, the non-minority community, the Hindus, have also established their educational institutions to consolidate and propagate their religion and its culture. But communal fanaticism and its exploitation in the political process exists independently of the school or of minorities. In all elections, national, state and local, candidates are put up by each party on the basis of the caste composition of the constituency—a Rajput, or a Brahmin or a Naidu or a Reddy, or a Khamma, or a Nair, or a Vokkaliga, or Jat, or a Yadav, to suit the caste of the electrorate.

and what education does!

However education also today has been mobilised as an active instrument in the propagation of various religions and sub-religions, read from there the use| misuse of the various religions for political and democratic,social and cultural purposes is only a small next step.

Hence the first question that arises is whether the Constitution should be amended to delete Article 30 (1) and (2) and take away the right of religious minorities to establish and administer educational institutions of their choice. This raises two related questions. The first one is whether such a constitutional move would divorce the wrong use, the exploitation of religion, through educational institutions by the political leaders belonging to various religions. Here it must be noted that educational institutions are merely the means through which the misuse of religion for non-religious purposes takes place. They are not the originating cause for such use|misuse.

to do or not to do?

Several studies have shown that the home is much more powerful, formative educational instrument of

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the child than the formal school. This would mean that if educational institutions founded by religious minorities were abolished, the home, where such religious training and traditions emanate as far as the child and adult members of the family are concerned, will become even more the breeding ground for such religiosity, and sense of religious separateness and uniqueness than at present. The end purpose of not using|misusing religion for political and power pur-

poses will not be served by amending the Constitution. There may be, on the contrary, some loss in educational excellence through such action, because some of the schools and colleges run by those bodies maintain high educational standards and are pioneers in educational development.

The second issue is that amending Article 30 of the Constitution and closing down educational institutions run by religious minorities will involve closing down educational institutions run by all religious bodies. Today the largest body of schools and colleges are run by non-minority Hindu agencies. These also will have to be closed, as they are no different in their use of religion for non-religious purposes as the minority religious institutions are.

as the issues arise!

But this again raises three issues :

First the springs of religiosity for the child and adult being nurtured in the home as noted earlier, the closing down of educational institutions run by the majority religion will not correct the possibilities of the misuse of religion. Only the locale will change, from the home plus school to just the home.

Second, being so largely a Hindu society, from morning till evening, in the AIR & TV broadcasts, in drama, in birth, marriage, death and innumerable ceremonies, even in every public lecture or seminar, let alone political gatherings, the tradition is to start all these events with an invocation. As examples, even the sale of a commodity like cement is surrounded by Hindu mythology as the following announced in the Hindu dated March 23 illustrates: "A message to Hinduism and India from Palanati Parthasarathy Cements of Andhra. The soaring heights of spiritualism have scaled heavenly heights when the sonorous sound of 'Narayana' sung in hymns by several hundreds of Vedic Scholars have reverberated through the scenic and splendrous hills, dales, skies enveloping and surcharging it with an ethos of Godliness by the Yagya performed recently for Viswa Santhi (World Peace) at the instance of various devotees in our place sanctifying it during SANKRANTHI. And we are proud to announce that we are the followers of Parthasarathy and invite you to join as members of Parathasarathy family to deal with their cement in Madras. CAUVERY MARKETING ASSOCIATES, 31|A Bashyakarlu Street, (Opposite to Kareem Beedi Factory), Kondi thope, Madras-600079."

"In fact, Article 30 of the Constitution, which gives religious minorities the right to establish and administer educational institutions of their choice has been used to pull in the mighty, educational stream of the country in support of the many religions of the country."

A minister opening a religious camp in a state said, "the calm that this state enjoys despite difficult situations as against the strife in some other states can be attributed to the rich traditions left by great saints and seeds of amity and tolerance sown by them in their scriptural literature..the youth should be made to learn the sacred books (which were placed on an elephant mount and led from the Siva-Vishnu temple)...The Government would extend all help for the scheme to mould the youth and develop the curricula at various levels for this purpose". This is one instance that shows that the roots of religion and religiosity are deeply ingrained in our society, which spawns this influence at every turn; while schools have only a marginal influence in regard to the communal traditions in which we are deeply involved.

"Education also today has been mobilised as an active instrument in the propagation of various religions and sub-religions, and from there the uses misuse of the various religions for political and economic, social and cultural purposes is only a small next step."

Third, the alternative to allowing religious bodies, endowments and societies to run educational institutions will be to make the running of all educational institutions a complete and total responsibility of the Government. One of the reasons for the inexorable sliding down of educational standards is the large role presently played by Government, which in effect means the non-educational bureaucracy, comprising 3 officers in the secretariat of each state. To hand over the schools, colleges and universities to the state as a monopoly to this group may well be like throwing the educational baby out with the dirty religious bath waters.

in schools and colleges!

Has education then a role to counter the growing menace of the misuse of religion, of what we call communalism, in the political and social life of the country. There are several very specific counters to communalism which the school and college can and should provide. First, the educational institutions can help develop in each student in school and college an intellectual, emotional and spiritual understanding of his|her being a member of our country, one community—India.

This is difficult because detailed studies show that the religious identity emerges very early in

childhood, the children perceiving their own religion by age 4-5 years, the intensity of the religious identity reaching its peak by 8-9 years, by which age children learn to identify a particular religious group to be the least preferred, and the target group of their prejudice, which takes on a final shape for the rest of one's life from this age. This instilling of religiosity and communalism in the child and adolescent is not, as noted earlier, the responsibility of the school. In fact, the religious identity begins at the pre-school age of 4-5 years, which is due to the

"The first question that arises is whether the Constitution should be amended to delete Article 30(1) and (2) and take away the right of religious minorities to establish and administer educational institutions of their choice."

family customs, and society which inculcates, promotes and strengthens religiosity. The parents give the child religious and ethnic socialisation, the festivals, the scriptures and the places of worships reinforce the parental teaching.

In this context, the school, from the nursery school stage, has to come out in the open, drop its facade of neutrality, and teach the child and adolescent the dangers of religious bigotry and prejudice on the one hand and the reality of their being one nation and one community on the other. This will involve a careful examination of the syllabi and textbooks in the school and college—both to weed out teachings promoting religious separateness and pride, leave alone religious fanaticism, and to incorporate the use of science and reasons as a guide to understand and resolve the problems of life. This also requires that the teacher change his hidden syllabi of watching for *Rahu Kalam* and the parent resorting to the family astrologer on every ceremonial occasion.

A quicker counteraction is the use of song and music. In song and music, the language barriers are transcended, as was demonstrated at a 10-day camp for primary school teachers of all the southern states held recently in Madras. The camp was attended by 0 teachers who were trained in singing and conducting the song in Telugu which ran 'little children, the citizen of tomorrow, you will show the path to the elders', the song in Urdu 'Sare Jahan se Achcha' and similar Tamil, Kannada and Malayalam songs which first made the teachers themselves realise the unity and beauty of India, and on that basis conveyed that message to the school children. Each teacher is given tape recorders and cassettes containing 17 songs, so that they can propagate the message of national solidarity and communal harmony in every language of the country in their schools.

the role is limited.. but!

The role of the school will, however, be limited, for the damage to the child would have been done before the school reaches the child. As pointed earlier, the sense of religious separateness and superiority which is the seed bed of communal fanaticism is developed from childhood by the family and particularly by the parents. The prejudiced parents produce prejudiced children by socially transmitting their attitudes. And so to reach the children, action by the school, as outlined above, has to be supplemented by programmes to reach the parents. Here the National Adult Education Programme which runs 2 lakh centres every night throughout the country, with 30 adult illiterates attending each centre, provides an important means of countering the sense of religious separateness and fanaticism, and conveying the message of our oneness and national unity.

But it is not the illiterate adults who are the communal fanatics. They are used by the educated adults to rouse communal feelings and passions which is something that adult education can and should counter. As far as the educated adults are concerned, the problem may be beyond redemption, but there is here a chance for mass media - TV & Radio - to replace their present ad hoc, haphazard national integration slogans, mixed with commercial advertisements, by carefully structured programmes that will bring out the evils of and damage to individuals and society from communalism, and arrange for its replacement by messages concerning secularism and national unity and oneness.

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One need that both the school and out of school, including mass media, programmes badly require is materials and messages as well as methods and techniques that counter communal feelings, bigotry and prejudices that are prevalent and convey effectively instead of teachings of religious tolerance, love, compassion, non-violence, and national oneness and unity. The resources now being wastefully expended on national integration councils and committee might be used instead to develop these messages by states and linguistic and cultural areas of the country

Liberating minds of all this nonsense !

Rais Ahmed

It's time now, says Prof. Ahmed, to reflect if religion has really created a better world for us to live in ! Obviously, he adds, religion has failed us badly because of its inherent character... (i) exclusiveness—each claiming to be a superior religion to the other; (ii) refusal to accept change, which is a fundamental law of nature—transcendental or "revealed" character; (iii) its clergy and their links with dominant sections of society—links with money, property, privilege and power.

IT IS LEGITIMATE AND TIMELY TO ASK. "why live with nonesense". Yet, one should realise that "nonsense" or irrationality is deeply entrenched in our society. Not only does it have a history and can be linked to the times of relative ignorance, but also one would find that certain groups and sections of society have benefited from it and therefore have actively promoted it throughout history. In other wo[rds] the thought structure and social structure have a c[er]tain correspondence, and nonsense in thought is re[lat]ed to various kinds of exploitations and vested i[nte]rests in society. Of course, nonsense and irrationa[lity] can grow to menacing proportions and may lead [to] disastrous effects. In that sense they lead to so[...]

Why live with nonsense

upheavals, and may ultimately lead to the establishment of a more just society and a society based on reason where irrationality would slowly fade out

All this has to be said to dispel the notion that it is simple to eradicate nonsense, or that could be weeded out through proper education· that kind of education itself would be resisted Indeed, there is a certain unity in the struggle for social change, educational reform and the establishment of rationality and humanism. It is in this spirit that nonsense should be unsparingly exposed so that social progress may be possible.

"Indeed, there is a certain unity in the struggle for social change, educational reform and the establishment of rationality and humanism. It is in this spirit that nonsense should be unsparingly exposed so that social progress may be possible".

Whither integration!

In our country one of the foremost questions is that of national integration. This is both a historic necessity since people of different cultures, languages and faith have lived here for long and live here for good, and a compulsion of reason since interdependence of resources and economics is so great that the development of one people and region cannot take place without that of the other. Yet in the very process of development there is a scramble for capturing advantages or retaining positions of power and control. The conflicts perpetuate and intensify and there are no holds barred in achieving the advancement of personal or corporate interests. In our international environment, where it is the declared policy of some countries to beat down the assertively independent new States into conformity and submission, the prevailing tensions and conflicts provide an excellent opportunity to intervene Religion and caste-based differences are probably the easiest to play upon and utilize for nefarious purposes since they are the farthest away from reason and closest to raw emotion, and since it is here that "mass movements" of a wholly destructive character can be built up So let us examine from the sense and nonsense point of view where we stand in respect of religion and its overtone of fanaticism and communalism.

religion sets the limits!

There is no doubt that religion in its purest form, when it is dissociated from human failings and social problems, to philosophy, it is abstract thought. In this case, it is another name for ideals and hence all religions convey the same message; the message of truth, love and of service to humanity The great role of religions in converting human society from its predatory character to a society of interdependence and of refined culture is undeniable Yet, one should realise the equally great limitations of religion in transforming individuals and bringing about social change. For thousands of years, practically everyone is born into a religion and religious values and doctrines dinned in the ears of all children. But one must reflect if this has created a better world for us to live in—is there more pity and tolerance in man, is he more selfless or less violent than his ancestors?—is there less hatred, violence and corruption in society today? Obviously, religion has failed to control passion, greed and selfishness because of its basic characteristics (i) *exclusiveness*—each claiming to be a superior religion to the other, (ii) refusal to accept change, which is a fundamental law of nature—transcendental or "revealed" character; (iii) its clergy and their links with dominant sections of society—links with money, property, privileges and power.

Indeed if we would want religion to serve a constructive social purpose we must recognise its limitations and free it from the unreal aura of being the exclusive means of attaining the highest moral values, and of being the main vehicle of creating a more just society. We must recognise that in our centuries of social evolution, the best moral values have been distilled and encoded in numerous laws which have been adopted, the chief custodians of such values being now the parliaments, the courts of law and public opinion; that high moral values are so essential for social integration, and even survival, that they have to be inculcated in all citizens irrespective of religion. We must recognize that society advances by questioning that which is established, by searching for new answers and remedies and by rational analysis of its problems and not by unquestioning submission to authority, by dogma and by fanatic pursuit of hard lines Religion cannot be the basis of ushering in a secular, socialist and democratic society which are the aims laid down in our Constitution

religion vs. secularism!

When religion takes on a "communal" colour it soon adopts other highly irrational features. It propagates the belief because a group of people follow a certain religion, they have common economic, social and political interest, which are different from those of the followers of other religions. So, one talks of Hindu, Muslim, Sikh or Christian interests—even of Hindu, Muslim or Sikh histories! This is a dangerous distortion of reality—in any region, for example, the economic interests of the people are one, they are integral and cannot be fragmented—the distorted outlook only helps divide the classes which do have common interests, and it simply serves the vested interests, and undermines genuine movements of social change. A higher level of communalistic consciousness even postulates that the social and economic interests of the various religious communities are antagonistic. This is a pernicious philosophy because it is wholly contrary to truth, and leads to fanaticism in individuals and growth of militant communal

organisations which can destroy the fabric of any society—particularly when the forces of destabilization lend it overt or covert support. The two-nation theory and other separatist movements are a natural consequence of such a belief or propaganda, and we must expose the roots of such a suicidal development in order to feel the outgrowth. In the social and political environment of today religion cannot be the basis of national integration. In order to preserve whatever good it can do to the individual or relief and succour it can bring to the soul, religion must only operate at a personal level. In fact, this is what has historically happened in other societies, and for us too, secularism must mean separating religion from those spheres of life where it has no relevance.

liberating minds!

It is obvious that here we are dealing with beliefs, attitudes, subconscious outlooks, prejudices, misconceptions, irrationality and deliberately encouraged communal movements. The only real tool society has at its disposal is education, and not just any education. First, the danger of distintegration must be sincerely perceived and then one should muster a will to counter such a deep-rooted and sometimes passionately held structure of thought. In the absence of such a will, education itself may contribute towards making the situation worse.

Children already come to school with the thoughts their parents have put in their minds, and teachers can easily consolidate and operationalize the prejudices to convert the young into fanatic soldiers of the faith. The fear has often been expressed that educational institutions, divided as they are on caste and community, language and region, are already playing a role—particularly in time of crisis—which tends to generate hatred and intolerance and leads to violence.

The educational strategy to meet such a challenge must be many-sided. And the first target group must be the public at large who must be made aware of the nuances and presumptions of communalism and its dangerous potential for the country. It must be made clear through mass media and all other means of ideological campaigning that religion is a personal matter, it does not determine the wages, or the productivity of land, or planning for the future A massive and direct effort to clear the cobwebs is called for in many languages, through pamphlets radio plays, stories and all other means of holding attention. Perhaps every state must have a corporation of dedicated citizens to relentlessly pursue these aims, and whatever financial support is needed must be provided out of funds for adult education.

the children ..!

In schools, where children are most impressionable, the concerns of national integration, and, inter alia, of a secular, just and democratic society must shine through all the subjects which are taught. It is not enough to remove the so-called objectionable portions from the prescribed books; we must go for a positive approach to create tolerance and goodwill, rationality in understanding history, science and the objectives of our society. A suggestion has been made that instead of wasting effort in weeding out undesirable material from existing books in all languages and all subjects, there should be a core curriculum for all schools, embracing 70 to 80 per cent of what is to be taught. Already there is a good deal common—only the books are often written by authors whose minds are not attuned to the larger concerns of our society and people. The balance of the curriculum could be designed to take local situations and environment into account.

the young and the teacher!

In the colleges and universities too there should be basic courses which all students must be exposed to—which would provide a rational basis for understanding social evolution, the role of ideas and the necessity of a scientific temper in tackling all social and personal problems The roots of religion and its role vis-a-vis values and morality must be discussed so that each student can form his own ideas in this crucial field Pride in our country, in the many facets of its culture, in our struggle for freedom and confidence in its bright future, must be inculcated.

"In schools, where the children are most impressionable the concerns of national integration, and inter alia of a secular, just and democratic society must shine through all the subjects which are taught It is not enough to remove the so-called objectionable portions from the prescribed books".

The most crucial role is that of the teacher. Who is to present a rational approach, who is to lead a dispassionate discussion on sensitive issues, who is to prepare the minds for reason and openness to change? One comes ultimately to the necessity of orientation and even training for teachers who work in institutions of higher education. This is an urgent task—but one finds considerable willingness and readiness amongst teachers to undertake it. We have, therefore, to generate and encourage by appropriate funding activities which will lead to the renewal of our teachers. Once again, mass media, correspondence cum contact programmes, and holding of widespread discussions come to mind. The task is difficult; the change may take many years before it becomes perceptible, but we have no alternatives.

Towards a rational social existence !

K. N. Kabra

> *"The Pseudo-Fausts of the Third World have barely in a generation become remarkably adept in manipulating images and symbols of progress...the public relations of pseudo-development has become a major world-wide industry—but notoriously inept at generating real progress to compensate for the real misery and devastation they bring. From time to time a people manage to overthrow its pseudo-developers —like that world class pseudo-Faustian, the Shah of Iran."*
>
> —*Marshall Berman*

MOVING AWAY FROM CENTURIES OF ARRESTED DEVELOPMENT and all-round degradation to a phase of pseudo-development for over close to four decades, what do we find the Indian reality to be like ? Few would claim to have realised the dreams and fond hopes cherished by the masses This is not to deny that a definite thaw has taken place and some decisive steps have been taken. The trouble is that we are messed up regarding the direction and various aspects are not in harmony with each other. We have become more divided and mutual antagonism is on the rise.

this quest for modernity !

If man is the measure of all our endeavours and fullest flowering of human potential the touchstone, we find that the quest for modernity and growth has landed us into a situation of utter confusion, cynicism and widespread misery. It may be because of some massive short-cuts which were tried. We started by treating economic development as the master-key to all-round development. Then, we further misleadingly reduced economic development to mere economic growth.

By trying to develop productive capacities as such, largely with their existing forms, content, control and beneficiaries, we thought we would have laid the foundations for the emergence of a unified nation and a strong, empathic nationalism - a situation in which "the free development of each will be the condition for the free development of all." It was thought that by sustaining such growth on the basis of given structures, relationships and institutions and by

Why live with nonsense

introducing some new ones like planning, public sector, parliamentary plural democracy, greater use of science and technology, etc., we would usher in an era of self-generated and self-propelled prosperity which is equitably shared and harmoniously lived

and the offshoots !

Given the simplistic nature of the model of change, based broadly on euphoric optimism and imitative historical analogies, such a perception and practice of 'social development' was bound to lead us into the dark alleys of distorted growth, heightened social, economic, ethnic-religious, regional, political and cultural imbalances and loss of momentum and optimism.

Faced with these grim challenges, we are substituting self-congratulation and pedalling of false alternatives for a thorough, scientific, no-holds-barred debate on where did we go wrong and how. It is erroneously assumed that a thorough re-appraisal of our path, pattern and model of development will weaken national will and give rise to cynicism.

Such an uncritical and unscientific attitude towards building an alternative future, more harmonious, balanced and rewarding, embracing every one, is reflected in some currently popular and powerful perceptions of the nature of our problems as well as their solutions. Recently, population problem has been given the number one place. This amounts to treating a great majority as irrational in their reproductive behaviour both from individual and social point of view. Many social, psychological and economic factors go to determine reproductive behaviour and it is not as if the animal instincts overpower everything else.

There is no *a priori* reason and empirical evidence available that any society legitimating individual pursuit of self-interest as the prime motivational factor has ever succeeded in directly reducing the fertility rate in order to yield zero or low rate of growth of population. A low rate of population growth follows development rather than precede it. Thus treating population growth as our number one headache is unscientific and amounts to blaming the poor for their continued poverty.

just can't do that ... !

It is true that all pervasive application of science and technology is essential to cutting our Gordian Knots. But can science be applied unscientifically? Know-how needs to be supplemented and guided by know-why and know-what. You cannot treat everything discovered today as superior to everything made known yesterday. The latest cannot invariably be the best and careful choices have to be made about the relevant, useful and purposive technologies. The science of R&D is concerned in a big way with deciding what to do, how to do, its time-phasing and why from among a multiplicity of choices. Imitation is the antithesis of scientific temper. Thus no Alladin's lamp can be found in the pursuit of latest technology which may, on the contrary, lead to mal-development if it is not regulated in social interest.

Thus, we find that instead of being a nation of equal, responsible and responsive citizens, we are constantly at each other's throats, preseumably acting as a Hindu, a Muslim, a Sikh, a Christian or a member of a particular caste or linguistic group The values of acquisitive hedonism and unrestrained individualism and the associated institutions of private property, markets, private enterprise and competition are standing in the way of developing the potential of our productive forces and production relations for giving a better and more meaningful life, first to those who are the farthest from it Vested interests are blocking the adoption of rational behavioural norms They are fanning the fires of communalism, obscurantism, terrorism and authoritarianism They are trying to foster elitism in order to make the common people recipient of the largess which may one day hopefully trickle-down from the benevolence of the better off Blatant power play for money power, at home or abroad, has become the idiom of the day. Culture, intellectual pursuits, social commitments and a feeling of oneness with the people are considered too abstract to be bothered about, except by way of strengthening the vested interest and image building

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and the way out is ... !

In this situation, inculcation of scientific spirit and humanism, education of the mind, heart and hand, and promotion of a cohesive integrated culture, have become distant dreams Those who are too poor to live a human existence and those who are too rich to care for anything else except their wealth can hardly join hands to provide a milieu for nation-building and development of scientific temper which can make for a better tomorrow for everyone.

What is needed, first of all, is a scientific attitude towards development and its pursuit by such means as would end the dichotomy between the 'objects'

and 'subjects' of development. This requires a commitment and vision in which people are not treated as voting machines or recipients of doles or mere consumers in the market. In one word, what we require is an integrated restructuring of all the aspects of our social existence. Certainly, it is a long term task, but one has to go about it in a systematic manner, ensuring that every short-run step contributes to the realisation of the long-term goals.

Specifically, constitutional change is required in order to bring about real secularism, in which

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public policies, plans, programmes have to be shorn of religious rites, performances and overtones. Religion has to be confined to one's personal values, beliefs and methods of seeking spiritual solace and personal familial life-style. The State has not only to be equi-distant from all religions but has to be areligious so that conflicts about partiality and interference among majority and minority religions can be avoided and scientific temper is not tampered with. A cohesive, rational society can emerge only gradually by keeping a strict line of demarcation between matters of personal faith, belief and choice and matters of social concern and significance.

The implication of such a course of action for our present practice of trying to promote religious-mindedness through public media, public functions and public mobilisation are obvious. Just as a criminal is so in his individual capacity, so are patriots and or traitors, irrespective of their religion. No appeal should be made to religious values for promoting communal harmony, national integration and humanism. These are supreme values in themselves and have to be given solid socio-economic and psychological foundations. Similarly, wooing electorate on the basis of implicit or explicit religious appeal or religious chauvinism or artificially-created persecution complex must be exposed, decried and stopped.

teach the right way!

A multiple theocracy, trying to bring about "Sarva-Dharma Sambhava" (equal treatment to and respect for all religions) by preaching and rabble-rousing by use of multiple religious symbols and rituals without creating socio-economic foundations for empathic social relationships is, in effect, a steps to weaken secularism.

It means education has to be geared to scientific values and attitudes. Presentation of religions as a part of historic, cultural heritage but explaining their socio-economic and philosophical roots in a non-controversial, non-partisan manner and constant portrayal of religion as a matter of personal ideas and beliefs are essential to building a secular ethos. One can go a step further and show how religion has been made to play a divisive role by the dominant political and economic forces. We say political and economic forces because under pre-capitalist social formations, the political and economic forces were one and the same; their separate institution is a capitalist phenomenon. Similarly, it ought to be demonstrated that colonialism used religion for a policy of dividing people in order to rule. The ruling classes in a capitalist society, in league with imperialism, are still trying to make the religion play the same role. Thus in order to ensure genuine sanctity of religion, its class-role has to be ended. This can be done by making religion a personal, non-collective phenomenon.

and create a new man !

Science education does not by itself generate scientific temper. This dichotomy must be brought to an end by inculcating a questioning spirit rather than developing weak, submissive students. For evolving such an educational system, it has to be viewed as something more than a means of imparting skills necessary for the productive apparatus. It has to be a means for creating a new man, a citizen of a national society. Qualitative changes in the content of education and pedagogical methods are required for this purpose.

In sum, if we have to decisively break away from the present reality of living with a lot of nonsense,

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we have first to identify the nonsensical elements existing around us. These are there in our value-system, education, religious practices, politics, family system, economy, and what not. This is a basic feature of our underdevelopment made worse by the pursuit of maldevelopment. A struggle against the hegemony of this pervasive false conciousness is by the people over their social existence in order to build it a new in their own common interest and through their own collective endeavours. □

Let's now do away with this hypocrisy!

Nikhil Chakravartty

This secularism, argues Nikhil Chakravartty, is just a myth we have fondly woven around us. The truth, he says, is we just do'nt care to even look at the dictionary meaning of secularism, what to talk of making it a way of life ! Was Gandhiji really secular, he poses the question and answers ....No, Nothing of this kind.... How and why, he explains here and pleads for active state role to end the hypocrisy. Why must we live with such nonsense ? This is the question which must never be evaded, he cautions.

THERE is a lot of mythology about India and we ourselves have fostered and spread such mythology. We claim to be the legatee of Gandhiji's non-violence, the most sadist violence at the slightest provocation. We claim that our Independence was achieved through peaceful transfer of power, but the partition that our leaders accepted in advance as the precondition to transfer of power, was marked by insensate communal pogrom which was anything but peaceful.

Among the many myths that we have fondly woven around our personality as a nation is about our secularism. There is hardly any politician who does not claim to be secular. And yet if you scratch them all, most of them will be found to be nurturing an in-built communalism. In fact, secularism is perhaps the most misused word in our vocabulary. Even when we are not using it with a coating of hypocrisy, we hardly care to grasp its meaning. We use secularism as a synonym for tolerance. Very few of us care to search in

Why live with nonsense

a dictionary the correct meaning of the word, secular. Chambers Twentieth Century Dictionary clearly defines secularism as "the belief that the state, morals, education, etc. should be independent of religion". In other words, secular is something not concerned with religion. Secularism as a concept is the product of the European Renaissance, when the monastic hold over society was shathered and as science made a break—through, rationality was enthroned. It was in this background that secularism emerges as a state of social relationship unencumbered by religious injunction.

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the myth and the truth!

One often hears Gandhiji was being described as secular He was nothing of the kind He had a strong religious streak in his character and he honestly maintained it in his social and political outlook What Gandhiji certainly was could be described as being extremely tolerant If he himself practised Hindu Dharma, he would go out of his way to uphold the right of any fellow citizen to practise Islam, Christianity or Buddhism. When he launched the crusade for the Harijan's right to enter the temple, he was not campaigning against the caste system as such, but against a particular obnoxious aspect of it. This certainly is far from a secularist view of society

There is delightfull but highly revealing story abou Indian secularism. Soon after Sheikh Mujibur Rehman's return after the liberation of Bangladesh, he appointed as his Education Minister a very enlightened liberal who had abhorred communalism throughout his life. Soon after taking over the charge, he abolished the practice of Friday being declared a holiday in educational institutions as it had been under Pakistan The maulvis and mullahs protested but the Education Minister would not relent beyond assuring a slightly longer lunch-break for the Friday prayer. His point was that Bangladesh had ceased to be part of an Islamic State that Pakistan was and in secular Bangladesh it would be wrong to declare Friday as a weekly holiday. The dissatisfied deputation of the maulvis went on appeal to the head of the Government, Sheikh Mujibur Rehman. He listened patiently to the maulvis and then called his Education Minister, who explained his point that Bangladesh having ceased to be part of an Islamic State that Pakistan was, and in secular Bangladesh, it would be wrong to declare Friday as the day of weekly holiday. Mujib listened to him carefully and then advised : "Follow the Indian model of secularism." What's that ? "Declare a holiday at every religious function of every religion."

and let's face it!

This is the image of our secularism we have fostered among our friends abroad. It is the portrait of overblown tolerance. There is no endeavour to instill a rational scientific outlook into our socio-political life. Often, our political pundits claim that India posseses a composite culture. On the face of it this is unexceptionable. India has been the classic case of a cultural mainstream into which many streams of civilization have come and joined. Inevitably, the culture that has been evolved is a rich culture. It may be called a composite culture in the sense that it has emerged out of interaction with many strains mingling in it.

But in the sense the term, composite culture, is loosely used by many people in our country, gives the impression that it is a sort of a coalition of cultures—a sort of coexistence of different strains. Such a coexistence instead of cohesion is perhaps inevitable at a particular stage of our national development. The economic base is certainly getting modernised with the foundations of industrialisation already laid. At the same time, we can find in our country various levels of production relations—from primitive tribal to modern industrial, with various layers interspersed in between.

Perched on such foundations, the cultural superstructure can hardly be a stereotype : it has to reflect different levels of human consciousness, and among these, the feudal outlook is dominant, and this is only to be expected, considering the fact that despite the intrusion of modern agriculture, the rural economy and with it the rural culture is dominantly feudal

this feudal outlook !

It would, however, be a mistake to think that the feudal outlook is confined to those who live and work in the countryside Strains of consciousness cannot be compartmentalised. If we look around, we find that many of the leading scientists in our country nurture a feudal outlook and even accept feudal superstitions in social and personal matters despite the fact that they have devoted life-time to scientific pursuits. The reason for this is not far to seek. Though many people are exposed to the knowledge of science, their roots—their upbringing, their education, their family environment—are to be found deeply entrenched in a feudal way of life.

"Very few of us care to search in a dictionary the correct meaning of the word, secular. Chambers Twentieth Century Dictionary clearly defines secularism as 'the belief that the state, morals, education, etc. should be independent of religion."

It is, therefore, necessary for us to understand that modernism that we find conspicuously displayed in narrow segment of our society is itself a bit phoney—while a large ocean of unalloyed feudal consciousness encircles the entire social milieu.

What have we done to combat this pernicious relic of feudal consciousness in our society ? Any nation about to embark upon an independent line, mobilises resources, both human and material, to galvanise national integration and one of the means

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of achieving it is by lifting the consciousness of its entire people from the fragmented feudal society. If nationalism is acknowledged as a strong unifying force in contrast to the petty world of feudal grooves, then it becomes all the more imperative that this task of rousing the national consciousness is undertaken through the channel of education. Even an elementary knowledge of our freedom struggle highlighting the sense of unity that it could generate, could have helped to instill the consciousness of national unity among our people. And any advance in this direction could have been the measure of our success in combating feudal outlook as embodied in communalism.

and we live with it !

The record on this score since Independence has been dismal The Founding Fathers of our Constitution left education as a state subject which, as things stood, meant very low priority, since the State Governments could not possibly be expected to take a national approach nor could they have the resources to undertake such a gigantic nation-building task. The result has been that generation after generation since Independence has been virtually bereft of that consciousness which only a total view of our national struggle for freedom could impart. It is this neglect of our history, of our freedom struggle, which left our youth ignorant of the great heritage that is theirs, with the result that even the bare depiction of Gandhiji's unique life-story by a British film director could attract millions of viewers, mostly young. For them, it was an initiation into a saga which they did not know !

If the low priority assigned to Education since Independence has deprived generations of Indians of the opportunity to know their history and thereby imbibe the sense of oneness, the parliamentary system that we have set up on the Westminster model has helped to foster narrow caste and communal loyalties, since every candidate for the election has to look at the caste and communal composition of the constituency, and pamper to those loyalties in the race for securing votes. We are thus faced with a strange anomaly that while every General Election is marked as a milestone on the road to democratic fulfilment, it has also brought out the sordid pulls and pressures of caste and communal loyalties on our body politic.

and what media does !

As part of the same malady, we find the media in India by and large has virtually abdicated its crucial role in the crusade against communalism and casteism. The press as a whole may not be whipping up communalism or casteism, but it has done very little to actively combat these ghastly manifestations of feudalism in our public life.

One would expect that with the Constitution enjoining secularism, the Government media would make conscious efforts to fight communalism or casteism While occasional slogans exhorting secularism are heard over the radio or TV, very little is done to make a determined bid to eliminate communalism and casteism Rather, we are at times confronted with the strange spectacle of a VIP inaugurating some new unit of a public sector undertaking with full-fledged paraphernalia of a Hindu ritual What is strange is that those responsible for our Radio and TV network, make no move to keep such items out of their programmes. A minister participating in such rituals is bad enough for our much-wanted secularism, to transmit it through television or radio is worse still.

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All this has landed our country in a state of utter nonsense. While we proclaim our allegiance to secularism, day in and day out, neither our education system nor our broadcasting network transmit the clear message of secularism. And our electoral process encourages the appeal to caste and communal loyalties in a manner that makes a mockery of our profession of secularism.

Why must we live with such nonsense ? This is the question which must never be evaded ☐

As this nonsensical game goes!

N. C. Menon

Changing this nonsensical scenario, says Menon, is indeed a tall order but all the same, an imperative today to ensure that the unity of the country is not torn asunder by communalism, fanaticism, fundamentalism and violence. Act, all of us, we must, he adds, to arrest this "religion let loose", which, in fact, is the focal point of our national maladies; but the primary responsibility to fight the menace, he asserts, is that of the government and government alone, which fully controls the all-powerful electronic media.

WHY LIVE WITH NONSENSE ? The question has a ready answer : Because it is a nonsensical world. It follows that if we do not want to live with nonsense we shall have no alternative to changing the world, altering the traditional patterns of interfacing—communication, cooperation and confrontation.

That is indeed a tall order. Down the heavily-travelled lanes of history, several persons, both great and small, have set out to change the world. Some have fallen by the wayside, with not even their memories left to linger. Others have managed to change the world to a greater or lesser degree. Some have had worldwide impact—religious perceptors like Jesus Christ, the Buddha and the Prophet Mohammed; scientists like Einstein; humanists like Mahatma Gandhi.

But did their impact endure in the manner originally intended ? Hardly. Christ's followers divided into Catcholics and Protestants, and have been trying to wipe each other out in Ireland; the Prophet's faithful hordes split into Shias and Sunnis and have been

Why live with nonsense

warring ever since; as for the disciples of Buddha and their descendents, they too have committed violence by the act of self-immolation in South-eastern Asia, and have become politico-religious hardliners in Sri Lanka.

All the religious scriptures stipulate the same verities—tolerance, love, truth, and the rest. Apparently, somewhere along the line the brand label of religions becomes more important than the principles they expound. Religion, as a result, became a catalyst for fanatical confrontation, rather than the refuge in faith of troubled minds.

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What about the others ? Einstein's marvellous scientific genius did take the frontiers of knowledge far ahead, but it has also had a dastardly offshoot in the development of weapons of mass-destruction and the Star Wars scenario. Mahatma Gandhi, the Apostle of Non-violence, himself died at the hands of the assassin; his humanism, intended to uplift the most abjectly downtrodden, became elitism of the worst kind, with Gandhi's own programmes being used to line the pockets of unprincipled do-gooders.

humanism, how & why!

What then can be done to ensure that humanism and rationality shall prevail ? How can we ensure that the unity of the country is not torn asunder by communalism, fanaticism, fundamentalism and violence—the four apocalyptic horsemen who have been riding in various parts of the land ?

A great deal of our troubles have their root in the fact that we have no communities without a communal tinge. A community, in the Western sense, is a group of persons living in proximity, sharing the same local problems, using the same local stores, sending their children to the same neighbourhood schools. It has very little to do with whether one is a Christian or a Jew or anything else.

Unfortunately, because of the degeneration of the originally work-related divisions into the caste system, our communities are conglomerations of clearly definable and well-defined caste groups, each with its own pride and prejudices. The situation becomes worse, as is so often the case in developing countries, when a large number of persons have to keep chasing an inadequate economic and social pie.

Fanaticism, fundamentalism and violence seem to be spawned by the same progenitor—FEAR. It is fear of defeat, of loss of face, of life, of liberty, of subjugation, of suppression and various other kinds, that make a person desperate enough to turn to violence. Almost in all cases, however, the fear is unfounded, and hence the reaction unpardonable. When the fundamentalistic Khomeini regime took control in Teheran, it put to death thousands of persons for fear that they might be plotting against the regime. There were, of course, a few who out of conviction would have preferred to bring the Shah back; but the fact remains that the preponderant bulk of those who were sacrificed in front of firing squads had only made the not unnatural error of no climbing on to the Khomeini-bandwagon early enough. Hundreds of those victims must have been gathered unto their forefathers hating the Shah and Khomeini with equal ferocity

the case of the Sikhs!

Or take the Sikhs in India : A hardworking, industrious and prosperous community, adapting themselves easily to diverse circumstances and surroundings and coming out on top. But they are also a religious people, particularly those in the countryside. And just because of a group of Sikh leaders, some trying to acquire and others attempting to retain their political clout, took to misinterpreting religion for the purpose, some of the Sikhs began to feel threatened. They were told that the proportion of Sikhs in the armed forces was being deliberately kept down; (the proportion had indeed gone down, but only because the prosperous Punjab peasant was less interested in army career); they were then told that Punjab was being discriminated against economically and in the matter of development priorities (economically, No, but the State could do with some large industries).

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A campaign of that nature unfortunately coincided with the rise of Jarnail Singh Bhindranwale, the young, erratic, eccentric, but magnetic personality, who was politically exploited by all and sundry for quite a while—at least long enough for Bhindranwale to realise the extent of his own personal power. He then had no use for politicians; he would play his own fundamentalistic politics.

It is sad to say, but there are those who stand to profit from communal clashes. Some organise "spon-

taneous" looting; others try to use them to alter the shape, size and colour of vote banks. The tragic fact is that communal clashes are more often than not brought about by whipping up religious frenzy. A cow's tail is found thrown into a temple, or piece of pig meat into a mosque. And presto, the situation ignites as easily as dry powder keg! Or, agitation starts in Gujarat over the policy of seat and job reservations and it quickly turns into a communal problem.

religion let loose!

The main focal point of our national maladies, therefore, seems to be religion let loose. And the only way out is that religion should be confined to individual homes and places of worship. The continuing troubles in Punjab are manifestly the result of religion being injected into politics and being taken out of the gurudwaras. But why should religious propaganda become so effective, taking into its embrace the illiterate and the educated, the rich and the not-so-rich, residents and non-residents?

A strong factor here is the individual's degree of integration in the collective life. Propaganda can play only on individuals more or less intensely involved in life currents. The isolated individual or the loner, having only rare contacts with society, is hardly sensitive to propaganda.

Propaganda acts on the person embroiled in the conflicts of his time, who shares the "foci of interest" of his society. A prior general interest must exist for propaganda to be effective. Propaganda is effective not when based on an individual prejudice, but when based on a collective centre of interest, shared by the people.

That is the reason religious or religion-based propaganda is so effective in India where the people are

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by and large deeply religious, and—perhaps as a fallout of the communal-based partition and the subsequent terrible carnage—are ever ready to lose their reason when they fear their religion is threatened. At the same time, knaves and fools are always there to invent catchwords and shibboleths to keep the honest people from coming to a just understanding.

as it goes in the West!

It must be noted, however, that the whole scenario also depends on the state of development of the country involved. In the West, religious propaganda is hardly ever successful. There, society as a whole is no longer interested in religious problems. At present, only isolated individuals are interested in religion. It is part of their private opinions, and no real public opinion exists on the subject.

It might also be recalled that centuries ago, at Byzantium, crowds fought in the streets over theological questions. In those days, religious propaganda would have made most sense and would have had the most chance of success.

"As far as murder, mayhem, and disruption are concerned, 1984 for India was an inauspicious year even by the cheerfully flexible standards of the pathologically optimistic. We now have to consider how 1985 and onwards can be progressively better, by eradicating communalism from our communities, by replacing our religion-oriented rash of prejudices with rationality."

If we take the most developed nations of the West, propaganda related to technology is what arouses a ready response, for everyone is as passionately interested in technology as in politics. One of the inadequately realised benefits of Prime Minister Rajiv Gandhi's determined plan to take India into the 21st century through modern technology is that the current preoccupation with, and the tendency to be influenced easily by, pseudo-religious factors will gradually diminish. The change will first be felt in the cities and will gradually spread to the countryside.

Prejudices and stereotypes can be the result of a person's background, stemming from his education, work, environment, and so on; but the foci of interest are truly produced by the whole of society. For instance, to discover why modern man is so obsessed with technology, one will have to analyse present-day society as a whole. And that goes for all the centres of interest of contemporary man. What is particularly worth noting in this formulation is the fact that these centres of interest are becoming more and more alike in all parts of the world. Thus, a focus of political interest has developed among the Asian peoples, the Islamic nations, the Africans and the Latin Americans. Such an expansion of interest inevitably entails a simultaneous expansion of propaganda, which may not be identical in all countries, but which will be able to operate in the same basic patterns and be related to the same centres of interest everywhere.

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the Stoetzel theory

In this regard, it should be possible to work out a solution if we follow up on a proposition by Jean Stoetzel. Stoetzel evolved a theory that a person can have two opinions on the same subject—his private opinion which he keeps carefully to himself or expresses only to a very small number of persons, and his "public" opinion, which he shares with his group. Propagandists exploit the coexistence of two opinions. By using their techniques, they make an individual take an action completely different from the action that would be sparked by his private opinion

"What India needs today is a theme that will be rationally popular and which has the ability, if ably presented, to outrank religion in the citizens' mental priorities. Prime Minister Rajiv Gandhi did pick on such a theme—unity and integrity—during the Parliamentary elections last year and managed to walk away with most of the seats."

No one will dispute the fact that an individual's private opinion is likely to be more true to his own self. When a communal riot develops, for example, his public opinion might be a lot more hawkish, partly out of peer pressure, and partly out of fear of being considered a renegade A person might go along with a mob setting fire to a residence, shop or house of worship, even while his private opinion demurs

The plan in India, therefore should be to strengthen the individual's private opinion If this is achieved in a sufficient number of individuals, the private opinion will automatically become the public opinion Such a congruence of the private and the public opinion cannot but strengthen the individual and the collective public will in a positive direction.

A single propaganda act will be confronted by a preexisting attitude For instance, if we make one speech or publish one article, the response will obviously be conditioned by the people's prior positions But that is hardly propaganda Pre-established attitudes can be demolished by real propaganda that surrounds the individual without pause from morning to night, from childhood to old age, in all that he reads, sees and hears, without giving him respite, or a moment to pause and think. But a full programme of that nature is too reminiscent of George Orwell's 1984 and is hardly possible anywhere, particularly in a democracy.

primarily the govt. job !

But more sophisticated and less objectionable means can be considered and implemented primarily by the government, with the visual, audio and print media chipping in. Since the first two forms of media are already under the control of the government, only print media is left for private enterprise.

What India needs today is a theme that will be nationally popular and which has the ability, if ably presented, to outrank religion in the citizens' mental priorities. Prime Minister Rajiv Gandhi did pick on such a theme—unity and integrity—during the Parliamentary elections last year and managed to walk away with most of the seats.

Patriotism could be such an issue, again if projected correctly. Otherwise, there is the danger that it can easily degenerate into jingoism and xenophobia That might bring about unity of sorts within the country, but is likely to trigger off strife with neighbouring nations. Dictators use a variation of this principle when they raise the war bogey whenever internal disaffection begins to swell.

In any effort to change the people's perceptions, it is important to remember a salient fact : Man often refers to himself as "the rational animal"; and so he is for a very small part of the time. The rest of his day is spent in various actions, trivial remarks, greetings, daydreaming, and a whole host of others which have little to do with rationality. Man can often be rational, but he can also be artistic, creative, imaginative, inquisitive, sensitive, meditative, and a number of other things besides. Thus it is not rationality or intelligence that marks man from the animals, but something much deeper,'underlying all these qualities. It is the supreme power of forming symbolized concepts and relating them in an ordered way to himself and to life.

It is to this supreme aspect of the human psyche that we have to appeal, and appeal constantly, if we hope to change individual attitudes. Television can do this with a great deal of efficacy. But patriotism is not aroused by scores of film extras marching almost in step, singing national songs almost in tune It will take a more polished effort, say, for instance,the adventurous saga of a group of comandos in enemy territory, with one of them being a Muslim But the producers must resist the temptation to highlight his "Muslim-ness," and only let it come out naturally and in passing

"Impressionable minds are filled with stories of the valour and goodness of Ram, Krishna, the Prophet and Buddha etc. which, of course, is a good thing if the intent is to hold them up as exemplars. However, in the process, Krishna is typified as a Hindu God, Mohammed as the Muslim Prophet, and so on, creating religion-based divisions even in the early stages."

where textbooks err !

One must remember that it is as important to keep religion a private affair among the majority community, as it is to instil a sense of patriotic nationalism

(continued on page 72)

Use the media

Religion is breaking our society

Interview with Khushwant Singh

Chief Editor : Life has turned quite depressing these days. Look at the way we go about—this terrorism, communal clashes, wave of fundamentalism and what not ! Isn't it all nonsense we live with today ? How you feel about all this ?

This turmoil we live with has, of course, now assumed serious proportion, but the phenomenon of mutual bickerings, communal strife and this hypocrisy has all along remained active with us You may like to say something on the situation.

Khushwant Singh : I agree that life in India today has become nasty, brutish and often short. At the same time, I am convinced that it need not be lived that way. At the root of all our troubles—terrorism, communal violence and manifestations of religious fanaticism is the exploding population. We are too many people living in a congested land without prospects of being able to earn our livelihoods. This uncertainty about its future makes the younger generation jittery and turn to nihilism. anarchism and religious fundamentalism.

Chief Editor : Religion, as it goes, seems to have outlived its utility. It serves more as an instrument of exploitation than unifying force in the life today. How you see this phenomenon ?

Khushwant Singh. Institutionalised religion has indeed outlived its utility. It is not even an opiate for the people but a mischievous spiritual liquor which incites adherents to wage war against people who subscribe to other religions. We must evolve a new religion based on work ethic and respect for others' feelings. Our two creeds should be : "Work is worship, but worship is not work." And, "Do not hurt the feelings of your fellow humans."

Chief Editor : Again, religion, in practice, only divides humanity into community cages, where we nurture our pride and prejudices. We go about in life only to assert our identities! Shall life continue moving this way?

I believe you don't like these barriers which divide humanity and foster this community cage living! What, you think, we need doing so that these barriers fall apart and we live as just human beings.

Khushwant Singh : We need not confine ourselves in "community cages" and yet retain our sense of belonging to a particular community. I am an agnostic and yet I find it important for my emotional well-being to be known as a Sikh.

Chief Editor : The only way out, as we see, is to go radical in our ways; cast away the spell of these scriptures and actively work to promote humanism and rationality. Your views, please!

Khushwant Singh . I have no great regard for religious scriptures. I find most of them boring repetitive and vastly over-rated as works of literature. I get more moral precepts reading Shakespeare than I do reading all the scriptures put together.

Chief Editor : How you look at the performance of our press ? It doesn't seem to be quite concerned with such vital issues. What precisely prevents it from doing its might to cleanse life as it goes !

Khushwant Singh : Our press is single-minded in its obsession with political factionalism. This is largely due to the fact that almost all the editors of our leading national dailies and magazines read very little besides politics. That is why while they are held in awe where they occupy editorial chairs, they command very little respect and pass into oblivion as soon as they are retired.

Why live with nonsense

Chief Editor: As we are at it how you rate the Government-controlled media? Does it look helping promote scientific temper, which, incidentally, is constitutional obligation ?

Khushwant Singh : The government-controlled media's chief contribution to solving national problems consists of mouthing slogans in between programmes. It wastes an exorbitant proportion of its time on religion-related programmes like Keertans, Qawallis, Bhajans, religious discourses and not devotes enough time to subjects related to science. The government should benefit from its own experience. AIR and Doordarshan daily programmes for farmers, advising them on what to sow, when to sow, what fertilizers and pesticides to use and how to look after their cattle, have contributed richly to modernising our farming methods. At the same time, the continuing emphasis on religion has undoubtedly given birth to fundamentalism.

Chief Editor : Let's suppose you are given charge of directing activities of the Government-controlled media! what concrete steps you would like to take to revamp media for the purpose ?

Khushwant Singh : I would scrap all religion-related programmes. In any event, people who like keertans etc. can get them in their temples, gurudwaras and dargahs.

I would bring controversial characters face to face with thinkers who disagree with them and expose them to the people. If Jarnail Singh Bhindranwale were asked to face people like me in a televised debate, I could have blasted him by arguments long before he met with his end. Even today, if people like Arun Shourie and myself were asked to take on people like Longowal, Tohra or Badal to discuss the Anandpur Sahib Resolution, we could demolish them and their pretensions that it has no element of separatism in it. Bal Thackeray should be invited to face men like A. G. Noorani and Govind Talwalkar to let the people see what little sense he makes.

Chief Editor : The main thrust of our endeavour is to suggest (i) arrest religion and keep it confined to homes and places of worship and move to ban all religious processions; (ii) refashion this education system to mould minds in the right direction; and (iii) start using the Government media to promote humanism and rationality. Any comments !

Khushwant Singh : I am in entire agreement with you that religion should be resricted to the home and places of worship. No group should be allowed to demonstrate religiosity by taking out processions through our already crowded streets or organise enormous bhandaras or gatherings in public places. I also agree that there should be no teaching of religion in schools or colleges, nor encouragement for its propogation by state grants to institutions which do so. Religion has become the singlemost destructive factors in the disintegration of our society. □

(continued from page 70)

among the minority communities. Our textbooks regrettably err in this respect. Impressionable minds are filled with stories of the valour and goodness of Ram, Krishna, the Prophet and Buddha, etc. which, of course, is a good thing if the intent is to hold them up as exemplars. However, in the process, Krishna is typified as a Hindu God, Mohammed as the Muslim Prophet, and so on, creating religion-based divisions even in the early stages. If Pakistan does something bad on the border, for example, a Muslim boy in an Indian school may needlessly feel guilty—not aggrieved, but guilty. The reasons are not far to seek: He looks at the erring Pakistanis as fellow Muslims, rather than viewing himself as an Indian with reason to be angry or disappointed at the actions of a neighbour. And the fault is ours. That is what happens when religion is allowed to become an all-pervasive envelope for every action.

It is sad to say that even after three decades and more of Independence, we tend to think of ourselves as Hindus, Muslims or Christians; Punjabis, Assamese and Bengalis; as Jat Sikhs, Gursikhs, and Nirankari Sikhs; as Shias, Sunnis and Ahmediyas; as Brahmins, Thakurs, and Banias. How much more simple it would have been if the people's first and primary level of consciousness identified themselves as Indians !

what print media can do !

There is not a great deal that the print media can actually do, caught up as it is in catering instant news and views, and occasionally, entertainment. But it can reduce the chances for reinforcing existing prejudices. What, for instance, is the need to proclaim : "Sikh youth arrested with gun", or "Gujarati businessman held", or "Bengali servant flees with jewellery"? There should be no need to tag those in the news in such a manner, unless it is unavoidable and pertinent to the story. It would be much better to say that a man was arrested in Bhopal, or that a man from Bangalore was held in Bombay.

The print media could also help by not playing up communal clashes. or projecting gory details of violence. The right-to-know theory is fine up to a point, but not when it rends the social fabric.

With all the efforts of the government, the educational institutions and the media, however, it will be a long, hard grind; there can be no instant metamorphosis of long-held human attitudes. The battle against the evil off-shoots of obscurantists will only be won by a combination of a sustained, all-round campaign, an improving economy, and entry into the age of high technology. □

The nonsense that goes on the air !

P. C. Chatterji

Chatterji, one-time DG, AIR and DD, here closely examines the goings on in AIR and TV, in the backdrop of the prevailing confusion wrought by the two trends, one represented by Dr. Radhakrishnan, a votary of "true religion" and the second by Nehru, a crusader of scientific humanism. The word secular, he maintains, hardly exists in the vocabulary of broadcasting and what goes about is a mess-up, jointly put in operation by the official and ministerial apathy towards creating conducive environs in broadcasting for promoting humanism and rationality !

ONE OF THE THINGS WE INDIANS BOAST about is our spirituality. True this land has given birth to the Buddha, Mahatma Gandhi and a host of other great souls with vision and compassion for suffering humanity. Whether Indians as a whole are any less materialistic than others is highly doubtful. Be that as it may, the founding fathers of our Constitution, men like Dr. Radhakrishnan, felt that India had a message for the world. Another trend was personified in Nehru for whom the future lay in the scientific humanism which he had imbibed from the west. Indian secularism resulted from a shaky compromise between the two. Radhakrishnan was anxious to clarify that Indian secularism, unlike its western counterpart, was not against religion. It was equally sympathetic to all religions. Hence Arti-

Why live with nonsense

cles 25 and 26 guaranteeing the freedom of conscience and the right to protess, practice and propagate religion without discrimination against any. On the other hand, by important clauses in each of these Articles the state reserved to itself the right to interfere in religion on grounds of morality, health and public order. It also reserved the right to interfere in "secular activities associated with religion".

the two basic limitations !

I want to draw attention to these two limitations placed on the freedom of religion and first the latter which I shall deal with briefly. The limitation implies that there is a distinction between religion, or what the founding fathers, in speech after speech in the Constituent Assembly, described as "true religion" and the superstitions and other practises which are secular in nature and have become associated with it. It is true religion, that is faith, which gives a meaning and purpose to life, which they (Constituent Assembly) were interested in defending. Distinguished sociologists and scientists have lamented that Independence had seen a vast growth in superstitions, ritualistic and authoritarian practices motivated by political, economic and group rivalries.

"One of the things we Indians boast about is our spirituality. True land has given birth to the Buddha, Mahatma Gandhi and a host of other great souls with vision and compassion for suffering humanity. Whether Indians as a whole are any less materialistic than others is highly doubtful".

and the Supreme Court !

The Supreme Court itself has given a most unfortunate answer to the question : what makes anything an essential religious practice ? This occurred in the majority judgement of the case in which the Dai (the Head of the Dawoodi Bohra community) challenged the Bombay Prevention of Excommunication Act of 1949. Bohras at their baptismal ceremony swear total allegiance to the commands of the Dai, whose utterances are treated as the voice of divinity. So if you read a newspaper he disapproves of, you can be excommunicated, and that means a total severance of all family ties—if the family are not to suffer the same fate. The crucial part of the majority judgement maintained that if some practice is considered, by the community in general, to be an essential part of religion, then that has to be accepted. So, in short, if the Dai has been exercising this divine right in the past and if the community has accepted it, then it is his right for all time to come. Unfortunately, this case has never come up for an appeal before a full bench. The silver lining is that the then Chief Justice, Mr. B. P. Sinha, dissented. He pointed out that the way in which excommunication was being practised was not a purely religious matter. He said, "it (the Bombay Prevention of Excommunication Act) is aimed at ensuring human dignity and removing all those restrictions which prevent a person from living his own life so long as he did not interfere with similar rights of others."

Let me turn, however, to the other limitations placed on the freedom of religion. I propose to pass over the issues of public order and health which are obvious enough. The Constitution reserves to the state the right to interfere in a religious practice if it is against morality. This implies that some religious practices may be positively immoral and any such practice advocated by a religion should be stopped. This is a very serious proposition and I wonder how many have grasped its import. Leaving aside its negative aspect as a criticism of religion, believed by its followers to be revealed and immutable truth, it means that the Constitution is presenting at least a few basic principles of an alternative morality, a secular morality. For we can only reject a religious moral principle if we base ourselves on some other principle which we consider as superseding the religious one.

wither secular morality !

Now my contention is that over the past decades we have ignored this secular morality, some basic principles of which are enshrined in our Constitution. Secularism has itself been defined negatively as a theory which does not discriminate against any religion, which is equi-distant from all. It is, if anything, an amalgam of that fuzzy idea contained in the phrase "the essential unity of all religions."

But what positive content of its own does secularism have ? According to the established Indian view, none at all. On the other hand there are the fundamental rights guaranteed in Part III of the Constitution, such as human equality, equality before the law, freedom of expression and conscience and so on. Article 44 of the Directive Principles directs the state "to secure for the citizens a uniform Civil Code" throughout the country (doing away with the anomaly of Religious Personal Laws which to greater or lesser extent discriminate against women). Part IV A on fundamental duties lists the need for each citizen "to develop the scientific temper, humanism and the spirit of inquiry and reform." Enough and more than necessary to add up to a new and inspiring vision for human beings in India.

"It is true religion, that is faith which gives a meaning and purpose to life, which they (Constitutent Assembly) were interested in defending. Distinguished sociologists and scientists have lamented that Independence has seen a vast growth in superstitions ritualistic and authoritarian practices motivated by political, economic and group rivalries".

this broadcasting business !

What have the media been doing about secularism since Independence? I propose to confine myself to radio and TV which I served for over three decades. Where I am criticizing AIR and DD, let it be squarely understood that I am indicting myself; I can't run away from my share of responsibility. How far can one excuse onself by saying, "I did not think."

The word secular hardly exists in the vocabulary of broadcasting. In numerous statements on programme output called for by the Ministry of I&B, there are two categories which come close to secularism. They are "Communal Harmony and National Integration" and "Science" programmes Thus, for example, the devotional programme *Vandana* is supposed to inculcate attitudes of both communal harmony and linguistic integration. It is supposed to contain non-sectarian religious songs drawn from Hindu, Islamic, Christian and other religions, sung in different languages. This is more so in theory than in practice and in several of the South Indian stations different days of the week have been set aside for various Hindu sects. So *Vandana* designed as a venture in secularism through religious and linguistic harmony has ended by bringing in religion from the back door.

and the nonsense !

Over the decades the fight of some elements in the bureaucracy to maintain the secular character of Indian broadcasting was to keep religious programmes out of the air. *Vandana* was one such programme

"Over the past decades we have ignored this secular morality, some basic principles of which are enshrined in our Constitution. Secularism has itself been defined negatively as a theory which does not discriminate against any religion, which is equidistant from all. It is, if anything an amalgam of that fuzzy idea contained in the phrase 'the essential unity of all religions'."

It was argued on behalf of the Government that the programme was "devotional and moral" not religious and sectarian. I have said that such programmes were initiated by government. It would be more true to say that they resulted from the decision of a Minister or high official narrowly religious. Once started a case could be made for their continuance and the Minister's prestige was always a point which had to be considered. Two persons greatly responsible for giving a religious turn to broadcasting were Shri J. C. Mathur, DG from 1955 to 1961, and Shri Satya Narayan Sinha, both as Minister and subsequently as Governor of Madhya Pradesh

The line dividing culture from religion is a fine one. Not only in our own, but in several others, drama, epic poetry, music and dance have their roots in religion. The secularization of culture is a complex and slow process and what passes for culture may be indistinguishable from religion at a particular time. On the other hand it is quite easy to see that a Bharat Natyam recital in an auditorium or on the TV screen is art not religion. The distinction depends on several factors —the setting in which the performance takes place, the observance or nonobservance of rituals, the personality and background of the performers, and finally and most importantly, the objective of the performance—is it religious devotion or artistic excellence, not that the latter can be achieved without the appearance of the former. *Ramcharit Manas* originally broadcast from Bhopal at gubernatorial initiative and subsequently. after several repeats, which had drained it of all audience interest, was then ordered to be radiated from all stations in the Hindu belt. Here even the veneer of a literary programme was not sought to be maintained. And this is true also of the Braj Madhuri programme from Delhi several mornings in the week—no attempt at comparison with other works, no attempt to link the theme with social mores of the time.

"But what positive content of its own does secularism have? According to the established Indian view, none at all. On the other hand there are the fundamental rights guaranteed in Part III of the Constitution, such as human equality, equality before the law, freedom of expression and conscience and so on."

In Doordarshan we have had the same religious revivalism recently in more blatant form. I refer to the programmes on Yoga by Swamy Dhirendra Brahmachari where the demonstration of exercises was interspersed with a liberal dose of religious exhortation.

this science programme !

The other aspect of secularism as understood in broadcasting. is the propagation of science. This is carried out through AIR's non-formal educational broadcasts to rural and tribal audiences, industrial workers, women and children. In so far as such programmes provide information on how diseases can be fought, and how health and family welfare can be built up on the basis of scientific knowledge, they provide an antidote to superstition and dogma. Direct instruction in science is also taken up in AIR and Doordarshan's broadcasts to schools. For the general listener it is claimed by AIR that over twenty-five per cent of its prestigious Patel Lectures have been devoted to science and wide coverage has

been given to spectacular scientific achievements such as the Moon landing, Space flights and the like. There are Science Cells at 13 stations in the AIR net work and science correspondents each of these stations.

In 1973, one session of the Station Directors Conference was devoted to the drawing up of a Science Programme Policy and the keynote address on "Scientific Temper" was delivered by Dr. Jagjit Singh. Science Programmes, it was found, were compartmentalised. Science and the scientific attitude were not made part of the approach to problems in everyday life. Moreover, the publicity given to spectacular technological achievements tended to treat science itself as a form of magic. A comprehensive policy guidance note was drawn up but by and large it has remained a dead letter.

and the explanation !

The question arises as to why this should have happened? I give two explanations—there are no

"The word secular hardly exists in the vocabulary of broadcasting. In numerous statements on programme output called for by the Ministry of I&B, there are two categories which come close to secularism. They are 'Communal Harmony and National Integration' and 'Scientice' programmes".

doubt several others which might point to the nature of Indian Society and its various pressures. I refer to clause 2 of the AIR Code which prohibits "attack on religion or communities." AIR staff, who are no more enlightened than the average middle class graduate, with some exceptional talents, take this to mean that you cannot criticize "religion", whatever that might mean. Their attitude is well illustrated in the following incident.

In 1979, I suggested to my Talks Planners and Producers that unless we introduced an element of controversy, AIR's talks would have no audiences. I proposed a series in which the first two talks would be on "Godman and Miracles". The idea was that one person would speak for and the other against in two National Programme Talks following each other In this way direct polemics would be avoided. The late Prof. A.B. Shah, Editor of Quest and President of the Secular Society of India, readily agreed to speak against. We approached Dr. Bhagwantam, a former Scientific Adviser to the Govt of India, well-known as a devotee of a godman, to speak in favour. He refused. We approached Dr. V. V. Gokak, then Vice-Chancellor of Bangalore University. He had certain reservations but I knew him and I could assure him that the AIR Code precluded personal attacks and it would be strictly adhered to. He agreed but then went back on his word. Why these eminent men fight shy of defending publicly what they believe in, beats me. However, I decided that we would broadcast Mr. Shah's talk. In the announcement we said we were searching for a person who would present the opposite point of view. There were two responses—a Christian priest who wished to defend only the miracles of Christ and a student who could by no stretch of imagination qualify as a talker in the National Programme. What is significant, however, is the anger I faced from my senior staff at the Programme Review Meeting. Their religious feelings had been hurt and they could not distinguish between their personal feelings and what AIR should stand for as an institution of a Secular Government. A signature campaign with fake names was launched against me, no doubt inspired from within. So much for the spirit of inquiry.

more on the phenomenon !

Another incident which occurred about the same time, during the Janata rule, related to a play by Reoti Sharan Sharma, entitled, Mere Ghum Tumare Hain, (My sorrows are yours). It was based on an incident reported in the press in which a Harijan youth marries the daughter of his Brahmin teacher As a result of this he is in trouble in the school where he is employed. On a festival his wife persuades him to accompany her to the temple He is reluctant but eventually agrees to go. The couple were assaulted in the temple precincts and paraded naked through the streets of the town. When the Harijan youth goes to the courts, the Defence argues that the assault resulted from jealousy. The wife was said to be a loose woman and a former lover had attacked the couple. Caste prejudice was not involved. The play had been broadcast by Delhi Station and went off quietly. But it was opposed by some members of the staff on the ground that some remarks made in it were obscene. I read it with care before it was scheduled in the national series A day after the scheduled broadcast on the national hook up, I learnt that the broadcast had been cancelled, under orders of the Ministry—conveyed behind my back to one of my deputies, who also did not think it necessary to inform me! All this, as I wrote to Shri Advani, when the Verghese Working Group was working out AIR's autonomy! But this was capped by what Reoti Sharan told me some days later. He was coming up the steps of Akashwani Bhawan when he was accosted by one of AIR's most senior officers who said, "I am ashamed of you. You have insulted our community". That was from one Brahmin to another.

"The Government-controlled media, certainly, if it is to justify itself, it must become live and creative and if used with imagination and creativity, it can be one single source of Reformation and Renaissance in our country. There is one tradition in our country of which I am very proud and that is to settle disputes by means of *Vad Vivad*. Our radio and television are emaciated and emasculated when one compares what they produce as a so-called programme with creative potentialities of artists, writers, scientists and other creative thinkers. The only thing in which radio and television have succeeded in doing is to whet consumer appetite of people and therefore are a single source of turbulence and decay of morals and manners. There is nothing original about television and radio programmes. Everything is borrowed and nothing corresponds to our real needs. In the meantime, our poor satellite continues to be in its geo-synchronous orbit with hardly any worthwhile software to feed it with."

P. N. HAKSAR

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Our constitutional secularism sleeps as printed bombast and our national integration mocks as teasing illusion because our politics of godism makes minced meat of homogenised humanism, socio economic justice and spiritual-material synthesis. Today the Quran and the Bible, the Guru Granth Saheb and the Vedas are used to preach cut-throat politics and decree death sentence on our Republic's Founding Creed. We cannot survive unless we reverse this process and call the bluff of the gods. Secular activism and socialist humanism must now wage a war for constitutional victory to keep the wall of separation between matters social and secular, on the one hand and affairs scriptural and sacerdotal, on the other."

JUSTICE V R KRISHNA IYER

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Why should states overdraw ?

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Focus on youth problems

NEXT ISSUE

Focus on plan implementation

More women enrol for adult education !

AN APPRAISAL of the implementation of the Adult Education Programme during the Sixth Plan has indicated considerable progress. By the end of December 1984, 1,86,510 centres were functioning in 31 States and Union Territories with an enrolment of 55,34,763 adult learners. In 1980-81 there were 92,105 centres with an enrolment of 2 59 million adult learners.

Since two-thirds of the adult learners in the age group 15—35 are women, priority has been given to open new centres for women. The enrolment of women has steadily increased during the Sixth Plan period. As on December 31, 1984, out of the total learners, 52 26 per cent were women. In 1980 out of the total learners, only 38.58 per cent were women.

A comprehensive strategy to make adult education a mass programme has been proposed for the Seventh Five-Year Plan Special emphasis will be laid on areas which require more attention. ☐

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Why should states overdraw?

G. Karunakaran Pillai

A peak level of Rs. 1808 crore overdrafts by the States in January 1985 forced the Centre to do away with such facility on July 5, 1985. Unauthorised overdrafts are a sign of financial indiscipline. States spend without regard to the availability of resources. Such practice is unhealthy in a federal structure which negates planning process. This also breeds financial imbalance between the Centre and States. As an alternative, the author suggests, vigorous tax collection drive and efficient management of public enterprises by the States to generate surplus to take care of the overdrafts.

THE OVERDRAFTS OF the State governments on the Reserve Bank of India which were unusually high at Rs. 1808 crores on January 28, 1985 have been the subject of serious discussion in recent months between the Centre and the States in India. At the end of May 1985 the Union Finance Minister fixed the maximum ceiling of States' overdrafts at Rs. 1628 crores for the year 1985-86 and warned that States which drew in excess of the ceiling would bring down the overdraft to the stipulated limit in 7 days failing which they would face suspension of overdraft facility. Then, all the State governments agreed to reduce overdrafts and assured the Centre of a better financial management in the coming years. After having a round of discussion with the Chief Ministers the Union Finance Minister announced on July 4, 1985 the decision of the Centre to do away with the overdraft facility to the state governments. Overdrafts were converted into medium-term loans and would be repayable by States in four years ending 1989-90, with a moratorium of one year. The cut-off point for determining conversion of overdrafts into medium term loans has been taken on 28th January 1985, when these stood at Rs 1808 crores But the actual amount would be Rs 1628 crores as 10 per cent adjustment against loans would be made within this financial year. The rate of interest charged on medium term loans would be 8 per cent compared to 13 per cent paid to RBI for overdrafts. There will be no change in ways and means limit for individual states, at least for the time being.

The decision to scrap overdraft altogether is presumably due to the fact that Central assistance for plan schemes has been stepped up substantially in the current year and states will also be allowed a large share of the market borrowings of the Centre The Chief Ministers urged the centre to introduce the consignment tax, mentioned a year ago in the union budget 1984-85, to provide additional resources to the States which would take care of the States' overdraft problem

In this paper an attempt has been made to examine the reasons for the growth of unauthorized overdrafts and its menacing nature. Also it would examine the alternative to take care of the overdraft problem of the state governments.

Genesis of overdrafts

The states have been mainly dependent upon the Centre for loan requirements. They do not rely upon market borrowings. Article 293 of the Constitution of India empowers the Central government to grant loans to the state and/or guarantee loans by the state within the country. The Centre has been providing short-term loans in the form of ways and means advances and medium and long-term loans mainly from

the Consolidated Fund of India and in some cases from the Special Development Fund (built with the funds received in the form of foreign aid). Since 1969, under the Gadgil formula, the loan component of the plan assistance was fixed at 70 per cent of the assistance for states (the remaining 30 per cent by grants) excepting Jammu and Kashmir, Assam Meghalaya and Nagaland (for these states only 10 per cent of the plan assistance is provided in the form of Central loans).

States are also provided loan assistance at the discretion of the Ministry of Finance which consists of conditional and unconditional loans. Bulk of the assistance is provided to non-development programmes and non-plan programmes of developmental and non-developmental nature. Moreover loan assistance was given for non-plan revenue expenditure. Non-plan needs on revenue account are taken into account by the Finance Commission through shared taxes and grants and the deficit is covered by grants-in-aid under Article 275 of the Constitution On some occasions loans are given to clear off unauthorized overdrafts from RBI. Thus Central loans have been advanced to the States both in the form of plan and non-plan assistance intended for developmental and non-developmental purposes.

Under section 21-A of the Reserve Bank of India Act, all states except Jammu and Kashmir, have entered into agreement with RBI that, RBI handles the monetary transaction of these states by acting as their banker. The Act also empowers the RBI to provide advances to the States repayable within three months of the date of advance. Accordingly, RBI provides two types of advances : (1) normal ways and means advances for which no cover is necessary. These advances are called clean advances. They are fixed as a certain multiple of minimum cash balances held by each state with RBI. (2) Special advances against Central government securities. They are called secured advances and RBI has been sanctioning *ad hoc* limits to these advances. The states may run into unauthorized overdrafts and the problem of overdraft arises in two situations : (a) if the limit agreed to between RBI and states are exceeded, and (b) the overdrafts are not repaid at the end of the financial year.

Since 1967 the problem of overdrafts has been disturbing the financial balance between the Centre and states *inter se*. Since then the system of persistent unauthorised overdrafts became a menace. Because of the menacing nature of overdraft the Centre was forced to make it as one of the terms of reference to the Fifth Finance Commission in February 1968. The Fifth Finance Commission in its interim report devoted a chapter of 17 pages for dealing with this problem. The Commission in its interim report (1969) referred specifically to "a serious lacuna in the present arrangements for fiscal assistance to the states", viz., regarding non-plan capital deficit, but it did not devote any further attention to this problem in the final report.

The 5th Finance Commission recommended that the Centre should clear off unauthorized overdrafts of the concerned states out of the plan assistance to these states and in case that is insufficient it should make *ad hoc* loans to those states for clearing the unauthorised overdrafts and adjust future plan assistance for such *ad hoc* loans to those states. However, Centre could not implement the material recommendations in this regard, immediately in spite of granting special loan assistance to states on deficit principle. Perhaps Centre thought that, as politically risky. Although belatedly, the Centre cancelled all outstanding states overdrafts with RBI by issuing to them Rs. 421 crores of net ways and means of assistance at the end of April 1972.

The Centre made encouragement for repayment for certain stipulated percentages of outstanding overdraft in 1972-73 and in 1973-74, the Centre took over the overdraft through special medium term loans to states. The loans thus advanced to the states were repayable in 6 years beginning from 1973-74. This arrangement was expected to minimize the problem of States' unauthorized overdraft. Even after these measures States ran to unauthorized overdrafts and RBI was forced to decline to honour the cheques of some States in 1974. Then the Centre came to their rescue by advancing medium-term loans. Thus overdrafts emerged in the shape of medium term loans and it was successively extended to clear old medium term loans, inspite of the announcement by the Ministry of Planning that no such overdrafts will be allowed after the end of the year 1973-74.

The indebtedness of the States to the Centre is only a reflection of the assistance provided by the Centre to the States year after year for not only financing their plan outlay but also for meeting non-plan requirements. The Sixth Finance Commission estimated the non-plan capital gap of the States on a uniform and comparable basis for the 5-year period ending with 1978-79 and found that 19 states would have non-plan capital gap of Rs. 1994.64 crore. The Commission recommended : (1) Consolidation of some loans into uniform types, (2) extension of the period of repayment of some loans, (3) moratorium on the payment of some loans and (4) writing-off some loans. It also recommended that loans advanced by Centre to States for clearing their unauthorized overdrafts from RBI may be made repayable in 15 years instead of 6 years. The Commission recommended a debt relief to the States to the extent of Rs. 1969.62 crores. This provided relief to the states from mounting debts. The 7th Finance Commission (1978) also recommended a debt relief to the States to the extent of Rs. 2155.14 crores.

Notwithstanding these substantial provisions of debt relief, the problem of overdrafts has continued to

disturb the financial balance between the Centre and States. In a statement made by the Union Finance Minister in the Parliament in July 1982, a package of measures was announced to tackle the problem of the mounting overdrafts. In order to start 1982-83 with a clean slate medium term loans amounting Rs. 1748 crore were advanced to 18 States to clear overdrafts taken from RBI at the end of 1981-82. RBI doubled the ways and means limit of the states so that they would have a large cushion against temporary imbalances between receipts and expenditures. However, the problem of overdrafts persisted even after the advance of medium term totalling Rs. 400 crore in 1982-83. Although the outstanding overdrafts at the end of June 1983 were cleared by the States with the advance release of Central assistance, the phenomena emerged immediately after, even in July 1983. Since then the resort to overdraft has been substantial and persistent. The Centre once again discussed the problem with the states and those states whose overdrafts with RBI were very high were agreed to take necessary measures to improve their financial position and reduce their recourse to overdrafts. Despite these agreement, 8 states had overdrafts totalling Rs. 257.56 crore as on March 31, 1984 as against Rs. 56.93 crore by 3 states on March 31, 1983. The Centre advanced medium-term loans of Rs. 499.12 crore to 11 states to clear their overdrafts of 1983-84. Despite these assistance the States continued to resort to overdrafts. As on June 28, 1984, 9 states had overdrafts totalling Rs. 517.60 crore. The overdrafts were once again cleared by states with advance assistance of Rs. 570.02 crore released by the Centre to states on June 29, 1984. However, overdrafts reappeared in July, 1984 and their position deteriorated subsequently in regard to the magnitude of overdrafts. Overdrafts reached to the peak level of Rs. 1808 crore in June 1985 which forced the Centre to do away with overdraft facility on July 4, 1985 and to announce that no overdraft will be allowed any more under any circumstances.

The pernicious problem of overdrafts

The system of persistent unauthorized overdraft is the most obvious symbol of a complete negation of any rationale in Centre—State financial relations. The states take assistance without any pretext of permission. They decide their own needs and draw accordingly on RBI funds in excess of the limit of credit facilities allowed to them by agreement. Even though they are in the nature of ways and means advances have to be paid back in a period of 3 months, surprisingly enough, there is not the remotest likelihood of them being repaid at all except through future Central assistance. The money obtained in this manner was a sort of forced loans taken stealthily and then regularized. The procedure underlying overdraft was in strange contrast to that which states had to follow either before the Planning Commission or Finance Commission or directly with the Centre. If the system of unauthorized overdrafts persists unchecked, there is an implicit danger that no state will like to tread the long and weary alternative roads to Central aid. The recalcitrant states will be placed in an advantageous position and disciplined state penalised.

It thus follows that unauthorized overdrafts are a sign of financial indiscipline in that the concerned states overspend without any regard to the availability of resources The practice to run overdraft is unhealty in a federal structure. It is a negation of planning process and should not be allowed under any circumstances.

States case for overdrafts

The states' case for resorting to overdrafts appears to be as follows: (1) overdraft is like deficit financing of the Centre; (2) states are left with few and inelastic sources of revenue; (3) phenomenal growth of states borrowing from Centre; (4) states deficits are widening plan after plan; and (5) widening non-plan capital gap.

Let us consider these arguments one by one The memorandum submitted to the Eighth Finance Commission by Karnataka Government in 1983, gives an insight into the states approach to overdrafts and justification of resort to them. In the memorandum it is stated that "deficit financing by states is termed as overdrafts". Both unauthorized overdrafts and deficit financing owe their existence to combined revenue and capital receipts falling short of revenue and capital expenditures. However, there is substantial difference between the two. Deficit financing is permitted to the Centre, customary in India in each plan. Unauthorised overdrafts is illegal and inexcusable on the part of the states. There are deep social and economic reasons underlying deficit financing by Centre. In a country having unified currency and credit system only one authority has the right to decide the extent of deficit financing.

States generally complain that more elastic and more buoyant taxes are assigned to the Centre and states are left with few sources of Revenue and state taxes have the element of uncertainty. This complaint is not justifiable in the sense that the states get the share from the most elastic Central taxes, viz., income tax (85 per cent) and union excise taxes, (45 per cent) Further, sales tax, the principal state tax, is highly elastic with reference to economic activities, and is in fact a good source of state revenue. However, the problem is that the states are not tapping their potential tax sources. It cannot be said that states manage finance efficiently with prudence.

Union loans to the States have loomed larger in the total Central transfers in India. Hence, the states heavily indebted to the Centre. Debt owed to Centre by states stood at Rs. 44 crore on August 15, 1947

and by March 31, 1956 it reached Rs. 900 crore, and had a steep rise since then to Rs. 2014 crore on March 31, 1971 to Rs. 27059 crore on March 31, 1984. Thus states' indebtedness to the Centre has been accumulating year after year. It appears to be rather curious. The percentage share of Central loans to total transfers (tax shares and grants through Finance Commission, Planning Commission and Ministry of Finance) has been declining sharply. As is evident from Table 1, loans constituted 56 per cent of the total transfers to the states during First Five Year Plan period, declined to 32 per cent during the 6th Plan period. Since the proportion of loans to Central transfers are lower since the 4th Plan, it is untenable to suppose that states' indebtedness to Centre has been accumulating year after year. In the union finance, we can see that one-third of aggregate budgetary receipt of the Centre is in the nature of capital receipts, excluding deficit financing. The Centre is also confronted with the same problem of debt burden and it has also to provide for debt services.

cause of the substantial debt rescheduling and relief recommended by the Sixth, Seventh and Eighth Finance Commissions. These Commissions assessed the non-plan capital gaps of the states on a uniform and comparable basis for the respective Plan periods. The Sixth Finance Commission wiped out the whole capital gap. The Seventh Finance Commission provided a debt relief to the extent of Rs. 2155.14 crores. The Eighth Finance Commission calculated the non-plan capital gap of states at Rs. 6806 crores. Omitting the obligations arising from unauthorised overdrafts and repayment of small saving loans, the gap was estimated at Rs. 3853 crore, out of which debt relief of Rs. 2285 crore including a write off of Rs. 405 crore has been recommended. The problem is then what sort of attitude to debt this rescheduling of servicing charges by union loans provided as relief every five years breed among the states and where will it lead us to ?

Overdraft like drug is addictive. The more you draw, the more you need to draw. Instead of cutting

TABLE 1

Composition of transfer of resources from Centre to States

PLAN PERIODS

	I	II	III	AP	IV	V	VI
Percentage share of tax transfers to total transfer	24 1	23.3	21 4	24.0	30 2	33 0	34.6
Percentage share of grants to total	20 1	27 5	23 2	26 0	25 4	32 2	27.4
Percentage share of loans to total transfers	55 8	49 2	55 4	50 0	44 4	34 8	32.0

Source : K.K. George and I.S. Gulati, Centre-State Resource Transfers, 1951—84— An appraisal.

States often complain that their deficit is widening plan after plan If we compare the overall deficit as a proportion of total expenditure of both Centre and states, it is clear that the proportion of states' deficits to their total disbursements had been lower than the Centre's deficit of its total expenditure throughout the Plan Period (see Table 2).

down unproductive expenditure and intensifying the drive to mobilise additional resources, the states have been addicted to overdrafts—a practice which unequivocally declares the extent of states' inability in mobilising resources Instead of resorting to a purposeful decision on the part of the states to run up deficit, they should restrain Non-plan non-development expenditures, resort to vigorous tax collections drive and run the public undertakings efficiently so as to generate a surplus. This is the right solution to the problem of overdraft. □

TABLE 2

Overall deficit of Centre and States

PLAN PERIODS

	I	II	III	AP	IV	V	VI
Centre's overall deficit as a percentage of total disbursement	12.5	11.2	4.4	4 6	4.9	4.4	6.1
State's deficit as a Percentage of total disbursement	0 8	1 1	0 4	1 4	0 6	+1.5 (surplus)	2.7

(Source : same as for table 1).

The argument that states find themselves caught into 'debt trap' is fallacious. During the Fifth Plan Period debt servicing payment on Central loan accounted for more than two-thirds of new Central loans. In subsequent period, this ratio was falling be-

Yes, this abolition was overdue!

G. Srinivasan

The Centre's decision to convert the overdrafts by the States into loans to lessen Centre-State fiscal strains and also to provide relief to the debtor states is a welcome sign despite the dissipation of scarce resources and diversion of funds for poverty alleviation programmes to uses which have benefited non-poor, says the author. The ban on overdrafts for states is also due to the fact that Central assistance for plan schemes has been stepped up sizeably in 1985-86 and the states have been allowed a larger share of market borrowing. This is because the need for greater fiscal prudence at the level of states is a desirable desideratum for maintaining the momentum of the planned growth.

THE ENORMOUS OVERDRAFTS of the State Governments which were unusually high at 1808 crores rupees on January 28 this year have been the crucial issue of discussion in recent months between the Centre and the states. In fact, the staggering overdrafts incurred by the various states and union territories in the past had often evoked swift resentment from the Centre as it viewed them disapprovingly and deemed them as a draft on developmental finance. In the Centre's view, overdrafts tend to throw out of gear its well-laid calculations concerning the application and control of inflationary forces. In short, the problem of mounting state overdrafts has always been a bone of contention in the Centre-State fiscal relations.

Despite periodic protest raised by the Centre to discipline them financially, the states have gone about drawing overdrafts from the Reserve Bank of India and as on January 28 their outstanding on this aggregated to the tune of an awesome figure of 1808 crore As the need for financial discipline among states seems all the more crucial in view of the burgeoning growth of overdrafts, the Union Finance Minister, Mr. V. P. Singh convened a two-day conference of the State Chief Ministers in New Delhi during July to find an amicable solution for ending this unhealthy practice

Drawal of overdrafts unabated

At the conclusion of this meeting, Mr V. P. Singh said that the Government has resolved to do away with the overdraft facility to the states once for all. The excess drawals of Rs. 1628 crore, after allowing for a reduction of 10 per cent from the peak level of 1808 crores, would be converted into special loans repayable in five years with a moratorium of one year. The interest rate will be eight per cent and there will not be any change in the ways and means limits for individual states, at least for the time being. The procedure adopted now is thus not very different from the earlier arrangements when excess overdrafts were converted into special loans.

Implementing the decision

Under the latest arrangement, the states will derive some additional gain as they will in effect be getting a new loan of 696 crore rupees from the Centre which would also be taking over the outstanding amount of 932 crore rupees as on June 26 on its own account with the Reserve Bank. Since the states were called upon earlier by the Union Finance Ministry to cut down the overdrafts within a short period, many of them made strenous efforts to

bring down the excess drawals, even if that meant a diversion of funds from other sources or a slowing down of expenditure on some plan schemes. As a funding operation on the basis of the outstanding amount as on June 26 would have entailed hardship to those which had complied with the Finance Ministry decree and reduced the overdrafts, the special loans for 1628 crore rupees are to be granted on the basis of the position on January 28. Thus the Finance Minister has softened the blow and at the same time rewarded the endeavour of the states that made efforts to reduce overdrafts by converting not the overdrafts outstanding on June 26 but that of January 28 into a loan.

But whether the Centre will be able to enforce the ban on overdrafts is something that remains to be tested. Restrospectively speaking, some three years ago the then Union Finance Minister, Mr Pranab Mukherjee did away with the mechanism of overdrafts even while converting the combined overdrafts of states amounting to about 2086 crore rupees into medium and long term loan. But this did not dissuade the states from piling up another overdraft mountain of almost 2000 crore by January this year.

While the decision to do away with overdrafts may be a blessing for the states, the probability of states erring on the same side in the near future cannot altogether be discounted if past experience is any guide. In fact, to vindicate their growing overdrafts the states have often protested that they were unjustly treated by the Centre in the overall devolution of financial flows. States contend that the taxes assigned to them under the Constitution are far less elastic than those held by the Centre and therefore their yields have grown more slowly over time. Whatever may be the merit in this criticism, independent observers of public finance opine that it is incorrect to infer that the State's total revenue have grown more slowly than those of the Centre

Devolution as equalisation of fiscal imbalances

Besides, there is also no conclusive evidence that planned investment by the states is being blocked for want of funds. In point of fact, 51 per cent of the planned investment in the country during the Sixth Plan was to have been made by the states. The inescapable conclusion is that the states do not relish the way in which they are obtaining funds from the divisible pool and also do not like the way these funds are apportioned to them by the Centre. But constitutionally, the Centre has got certain obligations to fork out funds for deficit states by drawing from the surplus ones and regional equalisation of fiscal imbalances is a paramount function of the Centre under a federal set up like ours.

he states have scant reason to make grouse that the Centre arrogates to itself all revenue-generating tools and techniques. The transfer of resources to the states, has to simultaneously reduce fiscal imbalances among the states and enable the financially weaker states to come nearer to the standards of the stronger states. As such, a large degree of centralisation of revenue resources is indispensable not only for economic and administrative reasons but also to fulfil the objective of regional equalisation.

Why not improve efficiency of public enterprises?

Fiscal experts contend that if only the states improve the efficiency of investment in the state-run enterprises, a lot more could be achieved. But sadly the departmentally-run undertakings of the states and union territories, other than forests and mines and minerals, continue to pile up colossal losses. These aggregated 790 crore rupees in 1984-85 compared with 720 crore rupees in 1983-84. According to the pre-budget economic survey, performance of the two major non-departmental undertakings of the states, namely the state electricity boards and the state road transport corporations remained and continue to remain unsatisfactory as their commercial losses were estimated at 982 crore and 127 crore rupees respectively in 1984-85. If only the states obtained the returns prescribed by the Finance Commission, they would definitely have enormous surpluses in place of today's whopping deficits.

The Venkataraman Committee had suggested an eleven per cent return on power projects and the Rajadhyaksha Committee 15 per cent. But if instead of showing improvement in operational efficiency of state-run enterprises they incur losses, the blame needs to be squarely laid on the states alone which squander scarce resources in the reckless pursuit of populist and often non-developmental ventures.

Despite the dissipation of scarce resources and diversion of funds meant for poverty alleviation programmes to uses which have benefited the non-poor and the misuse of plan funds, the Centre had come forward to convert the overdrafts into loans to lesson Centre-State fiscal strains and also provide relief to the debtor states.

Decision on consignment tax

At the recent meeting, it was pointed out to the states that the Centre would also take a decision soon on consignment tax. The states had agreed to pool the collections from this proposal of tax. While 50 per cent of the collection would be pooled for distribution among various states, the remaining amount would be retained by each state. Moreover, there will be a bigger devolution of central tax revenues with the implementation of the recommendations of the Eighth Finance Commission. The impediments in resources rose mainly on account of the ever-growing non-plan expenditure and it was possible to maintain the outlay on the state plan schemes in the 1980-85 period

(continued on page 13)

Reducing population growth to zero by A.D. 2000

Mohan Dharia

Our food consumption is too low. All developed and most of the developing countries consume far more. The USSR needs more than 250 million tonnes to feed their population of 25 crores, while our foodgrains production of 150 million tonnes seems surplus for 75 crores of our people! It is because of our abject poverty and lowest purchasing power. Just imagine, what will happen to our country and our people if we do not halt our growth of population. It will never be possible to feed the growing millions and to abolish poverty which are the most serious challenges of the year 2000 and the next century, says the former Union Minister for Planning, Shri Dharia.

THE APPROACH PAPER to the 7th Five Year Plan (1985—90) envisages growth rate of population of 1.8 per cent per annum. It is estimated that the population of India in the terminal year of the 7th Plan will be around 803 million. This rate of growth is of the same order as was adopted in the exercises preceding the formulation of the 6th Plan. At the time of the preparation of the 6th Five Year Plan the Working Group on Population Policy set up by the Planning Commission had recommended the adoption of the long-term demographic goal of reducing the net reproduction rate (NRR) to 1 per cent by the year 1995 for the country as a whole, and by 2000 in all the States, from the present level of 1.67 per cent. For achieving the same it was presumed that—

1. The average size of the family would be reduced from 4.2 children to 2.3 children. in the year 2000.
2. The birth-rate per thousand population would be reduced from the level of 33 in 1978 to 21, in the year 2000.
3. The death-rate per thousand population would be reduced from about 14 in 1978 to 9, and the infant mortality rate would be reduced from 129 to 60 per thousand, or less.
4. As against 22 per cent of the eligible couples protected with family planning at present, 60 per cent would be protected, by the year 2000.
5. The population of India will be around 900 million by the turn of the century and will stabilise at 1200 million by the year A.D. 2050.

Basic causes behind poor performance

Lack of public enthusiasm and community participation, inadequacy of infrastructure for implementation, shortage of manpower, and failure of the Family Planning staff in generating motivation, have been shown as the main reasons for poor performance of Family Planning in the 6th Five Year Plan Document. The reasons, though valid, fail to analyse the basic causes of the failure. The death-rate, which was expected to come down to 10 per 1000 by 1975, still stands at 14 per 1000 by 1981. In a country, where 114 children out of every 1000 die immediately after birth, it is difficult to motivate either the people or the

staff, in effectively implementing the Family Planning Programme.

Religious customs and traditions

The poverty-stricken people feel that, additional hands may add to their incomes in due course, and they are reluctant to have Family Planning, which itself is a major reason of poverty. Religious customs and traditions are not prepared to accept the new change, as the birth of a child is treated as a gift of god, and to do anything against the natural course, is to displease god. Due to old concept of superiority of male over female, tubectomies or female sterilisations, though difficult compared to vasectomies, are being preferred, and 4|5th of the one million sterilisations performed during 1979-80 were tubectomies or female sterilisations. To educate the people in Family Planning is yet treated as something obscene, and effort is made to keep the youngsters miles away from this important vital knowledge. Early marriages, even contravening the Sharada Act, are being performed with all fanfare, and no action is taken as the officers coming from the same strata of society, do not feel anything about it. Even after 38 years of Independence, openly flouting the Sharada Act, more than 15,000 child-marriages are solemnised on one auspicious day of Vaisakhi in States like Rajasthan. When ministers and officers are themselves a party to such illegal acts, who could take any action—or prevent the illegal actions being performed on a massive scale?

Fight on a war-footing

It is primarily essential to generate social and economic conditions, so that the people opt for fewer children. This calls for proper integration of Health, Nutrition, Family Planning, and massive programme of educating the masses. Forgetting this aspect, though outlays for Family Planning have gone up, they are considerably low for general Health and Nutrition. Unless the people are assured of good health and long life, particularly to the newly born ones, it will not be possible to motivate them to opt for Family Planning Ignorance, poverty, religious customs and traditions and lack of proper health care, nutrition and also of national determination are the most important and vital reasons for the poor performance of Family Planning in the country. It is high time to involve the whole of the country by inculcating a fervour of patriotism against the menace of huge population, and to fight against it on a war-footing.

Fatal blow to programme of family planning

With huge population of over 75 crores, and uncontrolled growth-rate, it is impossible to render social and economic justice particularly to the weaker and poorer sections of the society. Family Planning had started picking up in the country. However, excesses during emergency, and the complacent approach after emergency have done greatest harm to the movement. Insistence by some of us in the Janata Government to continue 'Family Planning' programmes without excesses was not only disapproved, but the false populist urge went to the extent of dropping the concept of 'Family Planning' and was substituted by 'Family Welfare'. This greed for securing votes in power-oriented politics has given a fatal blow to this national programme of vital importance.

Compulsory family planning unacceptable!

No political party is prepared to speak today of certain compulsions for Family Planning, as it may antagonise or displease Hindus, Muslims, Christians, and perhaps all sections of voters. They are therefore, cautiously harping on voluntary measures. Unless the Family Planning Programme is lifted above the petty-political and party considerations, there are rare chances of controlling the population-growth. Due to religious and social customs, orthodox minds, ineffective machinery, non-committal bureaucracy and public lethargy, it has become difficult to check the ever-increasing population. I personally believe that in the interest of the our country, compulsory Family Planning after two issues for people of all castes, creeds and religions is inescapable and inevitable. It is likely that some fanatics and selfish elements may not accept compulsory Family Planning. However, time has come when compulsory Family Planning after two issues must be made statutory and obligatory without any fear or favour. Here. I would like to clarify that when I plead for Compulsory Family Planning, I want Compulsory Family Planning through legislation enacted by the elected representatives of the people, in a democratic way, I do distinguish between coercive methods and compulsory Family Planning having parliamentary sanctions. While T. R. Malthus propagated for controlled population by preventive checks, Malthusians emphasise usage of artificial methods of birth control. Those, who insist for Compulsory Family Planning like myself, are these days branded as Neo-Malthusians. Let us not enter into that controversy. The issues confronting the country are very clear. I am aware that, my emphasis on Compulsory Family Planning, though valid and sound, is not acceptable to the political and social leadership of the country for obvious reasons

It is clear that the programmes of Family Planning through voluntary methods will never be able to reach the targets, if left to the voluntary choice of the people. Under the circumstances the only course left is to introduce such economic sanctions, that will deter the people from having more than two issues. Economic sanctions approved by Parliament coupled with lucrative incentives may be able to strike a neat balance in between the Compulsory and Voluntary Family Planning. In this regard I would like to suggest the following Economic Sanctions and Incentives, through suitable enactments, to be applied to all

the citizens irrespective of their castes, creeds and religions :—

Economic sanctions

1. One who seeks service in Public, Private, Government, semi-Government sectors, must give an undertaking that, he/she will not have more than two issues, and if that couple gets a third issue, the service will stand automatically terminated

2. Those who are actually in service, and have more than two issues, must either get operated or should take adequate care, so that they do not have additional issues Otherwise services of such officers or employees in any sector will automatically stand terminated.

3. Every person seeking loans from Nationalised, Commercial, Co-operative Banks, or even from private money lenders, for industrial, agricultural, commercial or private purpose will have to accept similar conditions and the lending bodies or persons will be responsible for getting them implemented.

4. Those who want to enjoy facilities like ration-cards for subsidised foodgrains, edible oils, sugar, cloth, kerosene, etc. or subsidised fertilisers, pesticides, seeds, milk etc should be under an obligation to fulfil similar conditions.

5. Those who seek protection of Rent Act or accommodation in Government, co-operative, or private housing, will have to accept similar conditions.

6. Parents seeking admission for their children in schools, colleges and other public or private educational institutions should be under an obligation to fulfil similar conditions

7. Those who want to avail of the medical facilities from hospitals or medical centres belonging to government, semi-government or public trusts will have to accept similar conditions.

8. Those who want licences under the Shop Act, Factory Act, Vehicles Act, Industrial Act, etc. must accept similar conditions and obligations.

9. Those who seek water, electricity, telephone, gas connections for household, industrial and agricultural purposes, must accept similar conditions.

10. Those who seek elections to Parliament, State Legislatures, Municipal Bodies, Zilla Parishads, Panchayat Samities, Gram Panchayats, or to Educational, Cultural or Co-operative Bodies, must accept similar conditions. Failure of which should be treated as a disqualification, and the posts, to which such persons are elected should stand automatically vacated.

Necessary enactments be passed for the implementation of the above referred economic sanctions, and heavy penalties and punishments be imposed on those, who do not abide by them Along with them, the persons, or officers, or bodies in charge of the establishment, industries or offices should also be held responsible and should be made liable for penalties or punishments.

Incentives

Coupled with the Economic Sanctions, I may suggest the following Incentives :

1. All couples getting sterilised after one or two issues, should be given a cash reward of Rs. 2,000/-.

2. All couples getting sterilised after two issues, should be entitled to have free education for their children right from pre-primary to S.S.C. examination.

3. Any couple undertaking to have not more than one issue should be given topmost priority in services, government housing, entrance for their child in schools, or while issuing telephones, electricity, gas and similar other facilities The child should be entitled to get free education from pre-primary to graduation.

4. To popularise 'one Couple-one Child' programme, a couple undertaking to have only one issue should be freely insured for Rs. 10,000 after getting operated and the amount with bonus should be fully paid to the couple, or their assignee, after a period of twenty years

5. A couple getting married, after 25 years of age in case of male, and 21 years in case of female, willing to undertake that they will not have more than two issues be given priority in employment and accommodation in government or co-operative housing

6. Schools and educational institutions having 50 per cent or more girl-students, should be given 25 per cent additional grant over and above existing grants given by the Government or Governments. Similarly, educational institutions showing 10 per cent addition of girl-students every year should also be encouraged on similar basis.

7. Such State Governments, Zilla Parishads, Panchayat Samities, Municipal Corporations,

Municipalities, and Gram Panchayats, that bring down the birth rate by 1.5 per thousand, per year, so as to reach the target to zero growth rate by the year 2000, should be given sumptuous direct central assistance, by modifying the present formula of assistance.

8. All Governments, Local Self Governments, educational institutions voluntary organisations, Trade Unions, artists and their troupes and the political parties should be involved in a massive campaign for Family Planning. Radio, T.V., Press, Cinema houses should be asked to join this campaign as a national movement. Necessary equipment and literature should be made available for the purpose.

9. Income-tax relief of 33 per cent should be given to those, who donate for this national cause.

10. Private medical practitioners, performing sterilisation operations should be given due incentives on the basis of the operations carried out every year.

While providing above referred incentives, proper penalties may be imposed against those, who abuse the same.

Our resolve zero NRR by 2000

The present long term demographic goal of reducing the NRR to 1 by 1995, and to reach Zero NNR by 2050, when the population of the country will be stabilised at 120 crores, as approved by the Planning Commission and the Government deserves immediate reconsideration and must be changed. The country must resolve to achieve Zero NRR by the year 2000 and should modify the plan programmes accordingly It has been projected that, India will be a country having the largest population in the world, if the present growth of population is not effectively brought down. Without entering into any comparison with countries like China all political parties and social organisations must treat the programme of Family Planning, as a national programme of highest importance and come together to fight this aggression.

Failure will never be forgiven

The destiny of the country has been greatly endangered by the explosive growth of population. To meet this unprecedented challenge; there is no other option but to adopt and rigorously implement unorthodox, imaginative and farsighted measures with all strength at our command. Here is an occasion, when this vital programme must be lifted high above political considerations without any delay. The Prime Minister and the Central Government should come forward, to provide the required historical lead and irrespective of any differences, all opposition parties should respond with the same spirit. It is possible to evolve a national consensus on the ways, means and targets and to prepare a suitable national programme of action, by involving the whole of the country. Any failure on the part of our political and social leadership, in providing the required dynamic initiative in effectively controlling the population at this crucial hour, will never be forgiven by the coming generations ! □

Export targets in 1985-86

EXPORT TARGET FOR the year 1985-86 is fixed at Rs. 11736 crore. The commodity groups whose exports are expected to be higher during 1985-86 as compared to 1984-85 are. coffee, cereals, tobacco unmanufactured, spices, cashew kernels oil meals, shellac, processed foods, marine products, iron ore, manganese ore, leather & leather goods, sports goods, gems and jewellery, chemicals and allied products, engineering goods, textiles including coir and jute manufactures, handicrafts including woollen manufactures and raw cotton. India's export basket is sufficiently diversified The new products continuously emerge from within these broad commodity groups.

Cheaper cloth production up

IN CONSONANCE WITH the Textile Policy 1985, the Government has decided to raise the target of controlled cloth and Janata cloth production from 650 million sq metres to 700 million sq. metres during the current financial year.

This additional 50 million sq metres will be allocated to the production of Janata Cloth in the handloom sector This measures will go a long way in giving increased employment to handloom weavers all over country and in providing a larger quantum of cloth at affordable prices to the poorer sections of the population.

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at a satisfactory level only with liberal doses of Central assistance and the use of luxurious overdrafts. However, the current approach is that the plan effort should be on the basis of resources available and there would even be a monitoring of expenditure on schemes in the core sector with a view to ensuring that Central assistance is not diverted for other purposes.

In sum, the decision to ban overdrafts for states is exactly due to the fact that Central assistance for plan schemes have been stepped up sizeably in the current financial year and the states also will be allowed a larger share of market borrowing. Though it remains to be seen whether the new dispensation will work smoothly, the fact cannot be concealed that the need for greater fiscal prudence at the level of states is a desirable desideratum for maintaining the momentum of the planned growth of the country in the coming years. □

(Courtesy : All India Radio)

What's wrong with rural family welfare?

Chandra Pal Singh

Family welfare programme has to become a faith with people if we want to improve their physical and social quality of life, says the author. Its focus should be rural areas where it is yet to claim a breakthrough. For this, adequate medical personnel have to be made available to serve in the remotest corners of the country. The author laments that medical personnel think it a matter of dishonour to serve in rural areas. High Central and state officials should try to change this attitude by setting an example themselves.

THE PROBLEM OF rapid population growth is felt most severely in India. This has created problems of unemployment, land fragmentation, increasing disparities of income, unplanned urban growth, ill health, malnutrition, etc. India covers only 2.4 per cent of the world's land area, approximately 15 per cent of the world's population and only 1.5 per cent of world's income. Population growth in India is not only due to an increase in the birth rate but it is due to the decline in the death rate in general and infant mortality in particular. Advancement in preventive and curative medicines controlled the epidemics and other infectious diseases. A steep growth of population is taking place in our country. This is a very serious and burning problem before us. In our country, population control or family planning programme had unfortunately been treated as a politically sensitive matter. At the time of inauguration of 22nd National Conference of Parliamentarians on population and development, our Prime Minister, Mr. Rajiv Gandhi, emphasised that the family planning programme should not be politicised and reduced to a parochial level The family planning programme in India has come a long way since it was introduced in 1951. It is gradually progressing from promotion of simple contraceptive devices to the integration with the strategy of national development. The family is a basic unit of development and family welfare should be considered as an essential input in it. Family welfare programme is no an isolated programme for birth control, but now it aims at achieving the higher goal of improving the physical and social quality of life of the countrymen through the expansion of maternal and child health services. In fact, it is trying to improve the health base of the community. Mainly, our planners are trying for allround socio-economic development of the society.

Focus on rural areas

A major question before us is how to attain our goal. Our country is dominated by approximately 80 per cent rural population. Most of the rural population is still illiterate and careless towards health and health services provided by government in rural areas Medical officers posted in primary health centres located in rural settings should provide their services to the villagers Primary Health Centres staff should try for creating adequate motivation among the rural people on consideration of family welfare and providing all the necessary services and devices. Large scale mass education and media compaigns should be launched through television, All India Radio, newspapers, posters, wall paintings, pamphlets, bus-train boards, postal stationeries and other cards, etc. for educating and motivating the target couples in rural as well as urban areas. But actually field scene is different. Medical personnel are not yet available in adequate number and skill in the rural areas. Most of the medical personnel try to exploit the villagers in many ways. There are so many medical and paramedical

staff but only a few have service attitude towards villagers. Some medical personnel think that it is a matter of dishonour to serve in rural areas; but this is the reality what I have observed during my field work in three districts each in U.P. and M.P. in connection with a W.H.O.-funded project conducted by the National Institute of Health and Family Welfare, New Delhi. Only the P.H.C. staff is not responsible for this, but a deep-rooted economic corruption at various stages from top to bottom in health organisation support the above activities. We should avoid all the monetary give-and-take at various stages. If our higher officials, i.e , district and state level official have concern for this and can present an ideal before subordinates, only then we can achieve our goal.

Health education, a must

Health education is of crucial importance in promoting family welfare services in the country There should be awareness and conciousness about health in every individual. Only then our programmes will be fruitful for them. If the individual is not conscious about health and does not himself make the necessary efforts to be healthy, no other agency can provide him proper health. We know that an individual is not the object but the subject of health. Health personnel should give emphasis on health education. Information related to health should reach rural people. Health functionaries should try to teach certain skills to the rural people in health care Later on it will be part of villagers life. For communicating information and teaching skills, they can use so many audio-visual aids provided by the government. It will make their activities more effective. A lot of health education material, i.e., boards, charts, posters, booklets, pamphlets, etc. are being sent to all the field workers and sub centres but only a few medical officers take care in displaying them in time. Most often the stuff remains lying in one corner of the storeroom.

Health education starts from very beginning in the lap of mother. In childhood, the responsibility of health education falls on mothers. So we should try to educate mothers more and more in health care. At different stages of general education, there should be curriculum for health education. Health education should be a part of adult and continuing education programme also. After all, we can say that we cann't think of health and family welfare without proper health education and health-conciousness.

Why small families ?

Family planning programme is based on the acceptance of the small family norm by the people. First we should tell them—Why small family? And later on tell them—How small family? Mainly in rural areas, certain religious and fundamental beliefs are encouraging and giving sanction for large family norm and are supported by politico-social conditions. With the help of extension and motivation approaches, we should encourage the people against these belief Another major problem in poor families is that th children are economic assets. We should think hov this situation can be changed. Most of the parent even highly-educated one also, have desire for tw sons, in some cases one son. This often results in larg family.

Government is expanding family welfare programm more and more but the villagers feel that this is no their programme. It indicates that we are failing i communicating the real purpose and philosophy of th programme among villagers. When we succeed in generating enthusiasm and belief among the rural poo only then we can say that family planning must become a movement of the people, by the people, fo the people as our late Prime Minister Mrs. Indir Gandhi said many a time.

According to the 1981 census the country's population reached approximately 685 millions. Thirty year ago it was approximately 361 million. It is estimate that it will rise further to 950 million by the end o this century. Birth rate which was around 42 pe thousand in 1951 came down to about 33 per thousand in 1981. Our goal is to attain a birth rate of 21 and a death rate of 9 per thousand by A.D. 2000. It will result in annual growth rate of 1.2 per cent which i considered essential to stabilise the population of India in the coming fifty years. Couple protection level reached 22.7 per cent in 1980-81, 23.7 per cent in 1981-82, 25.9 per cent in 1982-83, and 29.0 per cent in 1983-84. Target for couple protection is 60 per cent by 2000 A.D. It is estimated that since the inception of the family planning programme in India a total of 55 millions births have been averted.

Health for all

The government has pledged full support for the implementation of the health and family welfare programme to ensure "Health for All" by the end of this century. The new government reiterated its intent to implement the family welfare programme, giving emphasis on the slogan 'Stop with Two'. In a booklet published by the Union Ministry of Health and Family Welfare, the following points are emphasised for serious thinking to countrymen :

Around 70 per cent of families live in one room tenements. The area of land for cultivation in the villages and the open land in the cities are getting reduced every year for building bricks, houses, roads, etc. Our forests are disappearing at the rate of a million hectares per year. In 1951 the per capita consumption of pulses (protein) was about 64 grams. It has come down to about 35 grams. We have to import edible oils valued at Rs. 1,000 crores every year. Half of the children presently in the age group of 11—14, do not attend any school yet; the schools are overcrowded and the teaching standards are not satisfactory. The present very high growth in our population is almost

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Meeting aspirations of youth !

Dr. V. R. M. Desai

The Year 1985 has been declared as the 'International Year of the Youth.' The United Nations has drawn the world's attention to the growing and serious crisis that confront millions of youth and children in the world. This apart, it recognises the importance of direct participation of youth in sharing the future of humanity and the necessity of meeting the needs and aspirations of youth. The author here feels that efforts are needed at various levels to acknowledge the conditions that confront youth realistically and with determination, to ensure that the year proves a success.

YOUTH IS A YOUNG MAN in heart, vibrating with zeal, drive, innovation and active at all times. But, by and large, it is defined in terms of age. The youth-year has been defined by the United Nations as the period between 15 and 25 years. But looking at the phases of transition, it is too restrictive and does not cover fully. For the purpose of our study, we have widened the scope and taken youths who are within the age range of 15 to 35 years.

The world's youth population was 915 million in 1985 and by A.D. 2000 it will be 1200 million—an increase of 31.1 per cent. The youth population of three major regions of the world—Asia, Africa and Latin America—will almost double by A.D. 2000. It is estimated that about 300-400 million young people would be in search of jobs in developing countries alone, a majority of whom are poor and under-privileged and have little chance of education and rewarding jobs.

More than 300 million youth—"the world's best resource"—are unable to find jobs Lack of access to education and high rates of school drop-outs result in widespread illiteracy, particularly among girls Violence, drugs, crime, prostitution and suicides trap more young and poor people than ever before. A recent study revealed that the key words in the experience of young people in the present decade are probably 'scarcity' 'unemployment', 'underemployment', 'ill-employment', 'anxiety', 'defensiveness', 'subsistence' and even 'survival', itself.

The potential untapped !

Particular categories of youth, such as women, rural youth, urban youth in marginal groups, disabled youth and young refugees are especially vulnerable to the current social problems which are compounded by rapid economic and technological change. The picture that emerges is of youthful energy thwarted and rejected—of youthful potential wasted—back-firing on the very society that time and again, neglects to provide youth with the understanding support, guidance and opportunity so crucial to them and in the long run, to all of society.

According to the 1981 Census, there were 21.45 crores of youth in India, comprising 12.13 crores in the age group of 15 and 24 and 9.32 crores in the age group of 25 and 34. Again, 15.68 crores or 73.1 per cent of youths lived in rural areas and 5.77 crores —26.9 per cent in urban areas. Youths accounted for 31.3 per cent of the total population. What is more. 59.2 per cent (12.70 crores) of the youths were

illiterate. Illiteracy was highest among the women and in rural areas. On the present reckoning the youth population in India is expected to increase to 312.8 million by A.D. 2000 accounting for 26 per cent of total world youth population.

Adequacy of educational training policies is often questioned because of rising rates of unemployment, migration, etc. The problem of women is still serious. Incidence of early school leaving among females is high. Existing curricula provide female students with relatively little opportunity to participate in development.

Rural youth

Rural youth with limited opportunities represent large and restless elements. These youth can respond positively to agricultural employment if it provides them adequate remunerative income, but social and cultural pressures against such employment operate strongly. Young people in rural, semi-urban and shanty town areas do not have necessary knowledge to assume responsibility for their own health and well-being. Because of their position as new entrants into major areas of life, youth are often affected by infringements on self-determination.

The main concern thus would be to concentrate on problems encountered in integrating youth in the overall life of society. The situation of youth is intimately linked to development process and any long term economic downtrend may have adverse effects. Emphasis needs to be placed on increasing quality and quantity of opportunities for youth for meaningful participation in development. Youth participation should be considered as an integral part of the development process. If not, their social disfunction becomes a norm and not an exception.

Theme of the IYY

The theme of the year is participation, development and peace. Participation implies that a person is recognised as potentially able to judge and decide on matters which concern him, is aware of this opportunity, has access to means necessary for taking advantage of information, guidance, structure, etc., and feels satisfied that one's contributions are recognised especially in the decision making process Concept of development as it relates to youth refers to growth of total personality of an individual on the one hand and total entity of local and national development on the other. It refers to a dynamic process of improving the quality of life at the grassroots level. Peace is an essential pre-requisite of life and could be promoted if conditions are created to enhance international understanding and co-operation and individual rights and national sovereignty are respected. It is hoped that the year will stimulate and raise young people's aspirations and ability to participate in all aspects of life—economic, political, social and cultural.

Plan of action

Youth are the pillars of the nation, the strength on which the country can take off. It is, therefore, necessary to increase the strength and the vitality of the youths in the conutry. Youth play a very important role in all kinds of economic activity—from agriculture and rural development to the defence of the country. The plan of action contains specific proposals in the areas of legislation, education and training, employment and economic activities, health, population, social services, environment and housing. The objective is to make everybody aware of the importance of nurturing this human resource, and to sensitize public opinion towards solving the problems of youth, and promoting their participation in social and economic development.

We cannot address the problems that confront today's youth, appraise their situation, promote policies and define actions, without taking a look at the all-embracing nature of their development, their care and upbringing before and through adolescence. The organisation sees IYY as a powerful means of saving and improving millions of child-lives by mobilising the vigour, imagination and steadfastness of young people in the following ways:

1. By making use of youth in cooperation with national governments as instruments of social change—particularly in rural areas—to benefit children and mothers. Youth leaders may be encouraged to play a significant role in mobilising the support of the community.
2. By actively enlisting the help and co-operation of youth organisations and youth leaders in the planning and implementation of all programmes relating to youths.
3. Encouraging and initiating programmes to improve the physical and mental capabilities of girls and young women constituting one half of the youth population.

Whether individually or collectively through youth organisations, youth can be very effective in mobilising community-based action.

Role of education

Education and technological use are linked up with each other. In the present day world of knowledge boom and scientific and technological explosion, the contribution of education to the total development process can hardly be underestimated. In fact education of youth is a prerequisite for any technological use by them for reshaping and transforming the rural communities from the state of deprivation to prosperity and from prolonged stagnation to sustained development. Education, knowledge and skill add to one's earning capacity and youth education in the developing countries is likely to have a significant effect on pro-

moting development and quality of life on following counts :

(i) Today education constitutes the basic input for the acquisition of skills and training, attainment of information about work opportunities and job openings. Thus education will help in promoting participation of youth in economic activities and add to their productivity.

(ii) Education will also help youth organise themselves for their rights and thus enable them to have an easy access to the technology that they can make use of.

(iii) Youth's education encourages small family norms as education per se delays marriage thus reducing fertility and strengthening family planning. This will indirectly help women have more time away from the household job and devote it to the learning of skills.

(iv) Youth's education itself is a sort of training in the use of technology if education is vocationalised. Education and technology thus go together. In developing countries, youth predominate in the agricultural sector and are moving into non-agricultural activities and service sector as well. In a relatively developed country like India, there is a more marked shift towards the industrial and services sectors. But, by and large, youth in developing countries remain concentrated in a limited number of traditional and non-traditional occupations which require few qualifications and are of low productivity. The employment pattern for youth is changing, owing to economic expansion, but many youth do not yet know how to take advantage of the new employment opportunities because of the lack of training, proper vocational guidance and general information. There is an urgent need to help rural youth to overcome the many problems they face, such as social isolation, lack of opportunities for economic and social advancement. In addition, training given to rural youth is not adapted to the needs and realities of rural life. For instance, white-collar education tends to militate against youths working in rural environment and fails to inculcate in them a sense of dignity of labour of all kinds. As such, one of the most important objectives should be that of changing the youths attitudes and the training of the skills so that they can increase their own capacities to be effective economic agents. Projects should be initiated that impart to the women the economic benefits. They provide them with a sense of independence as well as the satisfaction of contributing to the resources of the family.

Youth and the Sixth Plan

Youth in the country constitutes a vast human resource which is characterised by idealism and zeal, active habits, positive attitude towards service to others, an urge to be self-reliant and a willingness to explore newer and non-conformist approaches to societal problems. If properly harnessed and utilised, the youth could therefore be a powerful instrument of social, cultural and economic change. There are four major aspects of youth to be considered in a co-ordinated manner, viz., development, mobilisation, organisation and utilisation, to promote their involvement and participation in the nation-building activities. The general approach to, and details of, an integrated strategy for youth programmes need to be considered in a wider perspective than the educational system because the problems of youth relate to more profound and broader issues like personality development, transition from childhood into adulthood, gainful employment, suitable development of their spirit for adventure and opportunities for community service.

National youth policy

The guiding principles of the National Youth Policy aimed at the integrated development of the youth. The salient features of the Policy are · (a) to provide greater equality of opportunity to all among the youth, (b) to liberate their talent which is now lost to the society, (c) to ensure a higher average level of relevant basic skills and education through work and service, (d) to enable a smooth transition of the youth from childhood through adolescence to adulthood, as well from schools to the world of work and service, and (e) to channelise their energies, idealism and healthy aspirations towards developmental tasks, projects and programmes.

Institutional network

Institutions like the Nehru Yuvak Kendras, Yuvak Mandals and similar bodies linked to the Gram Sabhas would be utilised as the base of operations at the district level and provided with professional inputs and support for the tasks to be done . They would also have an inbuilt mechanism for feed back assimilation of new concepts and ideas and to extend activities in keeping with the changing areas development perspectives. The National Service Scheme for the student youth would be reviewed in order to make provision for real participation of students in development programmes, availing of the proposed non-formal manning structures envisaged in the Sixth Plan. These would also be coalesced with programmes monitored with reference to specific benefits and targets pertaining to the participating youth. There is also a need to decentralise the efforts and to set them in the context of local environmental conditions and needs as perceived by

and acceptable to the community in general and the youth in particular.

Approach in the Seventh Plan

One of the primary tasks of the Seventh Plan must be the harnessing of the country's abundant youth resources and improving their capabilities for development with equity. This is how the programmes for alleviation of poverty, reduction of economic and social inequalities and improving productivity can be integrated with development. The strategies and programmes for education, communication, training and organisation should be such as to release the latent power of women and youth as also economically weaker population groups, so that they can make an increasing contribution to the socio-economic development of the country. An important aspect of human youth resource development is to match manpower planning with educational planning to avoid imbalances between the supply and demand in regard to trained and educated manpower. Existing training programmes would thus need to be reviewed. The traditional skills of rural artisans require upgradation in tune with the changing village culture and to improve their competitiveness. Training facilities will have to be organised for categories of manpower where critical shortages have been identified and in the formation of new skills which are emerging. Training in intermediate skills need to be undertaken on a large scale for the provision of various services, including primary health services. Policies to attract and develop the required manpower for the hill and tribal areas will have to be pursued with vigour.

The harnessing of the youth energy for productive purpose will go a long way in maximisation of productive employment, alleviation of poverty and reduction in inter-class, inter-regional and rural-urban disparities, increase in food production, revolution in industrial production, higher level of social consumption, particularly in education, health, nutrition, sanitation and housing, adoption of a small family ecological and environmental conservation and eradication of social evils like dowry, untouchability, etc Youth is going to play a catalytic role in the integrated and harmonious growth of the society and usher into the 21st century. □

(*Continued from page* 16)

nullifying all our efforts to improve our lives. In fact, the standards in many spheres have come down, resulting in unhappiness, tension and conflicts.

The above points should be a matter of concern for all—planners, executives, politicians and the people But one thing is quite clear that for a balanced and faster development of all regions—urban, rural and tribal—there has to be a balanced growth of population. For this family welfare norms *has to become* a faith with the people rather than a mere official programme. □

Younger couples with fewer children limit family

A SURVEY UNDERTAKEN by the Ministry of Health and Family Welfare has revealed that more and more younger couples with lesser number of children are coming forward to accept one or the other method of family planning technique.

The Department of Family Welfare has been carrying out on an annual analysis of family planning acceptors by number of living children since 1977-78. The present study gives an analysis of the number of living children of acceptors of vasectomy, tubectomy, and I.D.U. during the year 1982-83.

The mean number of living children to vasectomy and tubectomy acceptors has declined from 3.5 and 3 7 in 1979-80 to 3.4 and 3.6 respectively in 1983-84.

The percentage of acceptors with 3 or less living children has increased from 59.5 per cent in 1979-80 to 62 per cent in 1983-84 in case of vasectomy and from 52.3 per cent to 54.5 per cent in case of tubectomy.

The mean number of living children IUD acceptors at the time of acceptance has declined significantly from 2.7 in 1979-80 to 2.3 in 1983-84. The percentage of IUD acceptors with 2 or less living children registered a significant increase from 50.7 per cent in 1979-80 to 63.4 per cent in 1983-84.

During 1982-83 the proportion of vasectomy acceptors with 3 or less living children was highest in Kerala (80 per cent) followed by Assam (75 per cent) and Andhra Pradesh (72 per cent).

In 1982-83 the proportion of tubectomy acceptors with three or less living children was highest in Kerala (77.0 per cent) followed by Andhra Pradesh (69 per cent) and Tamil Nadu (65 per cent).

During 1982-83, the proportion of IUD acceptors with two or less living children was highest in Maharashtra (78 per cent). Next in order were Kerala (74 per cent) Himachal Pradesh (68 per cent) and Gujarat (67 per cent).

The Department of Family Welfare collects data on various socio-demographic characteristics of family planning acceptors. The number of living children of family planning acceptors is an important parameter which determines the ultimate demographic impact of family planning programme. In general, acceptance by couples with less number of living children would imply higher demographic impact in terms of births averted. Further, the data helps in knowing the trends in the size of the family of family planning acceptors. □

And solving their problems !

(Miss) N.V. Rajeswari and
M. Hari

Youth has been from time immemorial a topic of angered, anguished and inconclusive discussion. More recently it has moved into place of primacy in conversation, news media and publications. Youth are the growth points of a society, and as has been said, they are the leaders of tomorrow. They are the best resource in national development. All the aspirations of the people, inhabiting the country, rest on the latent potentialities of our youth. The authors say that if the youth are properly educated, trained and inspired, their vitality and creativity could be aptly utilized for national reconstruction more effectively and efficiently.

THE POTENTIAL OF YOUTH, if it is to be properly tapped, requires understanding and support. Youth is a very special time with special challenges and is a period during which the body, personality, intellect and social attitudes are developing erratically usually independently of one another and frequently explosively. It is a time of life that is full of potential and problems. It is an age characterized by impatience as well as curiosity and by a strong desire to leave childhood behind and play an independent role. It, therefore, becomes imperative that youth are brought up in an environment which is stimulating and sufficiently challenging for them to be able to explore their potentialities and build up a satisfying future.

The adolescents differ physiologically and psychologically from children and adults. As such, youth is suffering from loss of identity. Thomas Forstenzer points out that very little has been done in the world to try to understand, let alone do something about, the problems of youth. It is, therefore, necessary to go into the needs and problems of our young people with a view to seeking solutions to these problems and of guiding the youth so that they may make smooth adjustments to change which they are encountering within their own growing self as well as in the environment around them.

Definition

There are many parts of the world where 'youth' is almost an unknown concept. Many children are abruptly and harshly catapulted into adulthood at a very early age. Youth is a twentieth century phenomenon in one sense atleast in the Asian world and more especially in India. Ideally the youth years are vital transition from childhood to adulthood. United Nations identifies the people in the 15—24 age group as 'youth' and it constitutes a substantial and growing proportion of population.

Situation of youth

In 1975 there were approximately 738 million people between 15 and 24 by the year 2000, when today's children will have become youth, it is estimated that there will be 1,180 million, an increase of 60 per cent worldwide. While youth population of the more developed regions will increase only 5 per cent in that period, the same age group in the less developed regions will increase by 80 per cent. Thus the challenge is greatest in developing countries. In 1985 there were approximately 170 million, 627 million and 105 million young people and it will increase to 341 mil-

lion 679 million and 129 million by the year 2000 A.D. in Africa, Asia and Latin America respectively. The increasing numbers and demands of the world's youth pose some very serious problems that require special attention. Demographically, they are going to be a very significant next generation. Because they are just beginning their sexual and child bearing life, they hold the key to the future demographic patterns and the resultant quality of life.

Problems

The increase of the youth population is likely to have adverse effects on economic growth and social progress, aggravating most of the problems young people are facing today. In other words, the problems facing this age group are increasing as fast as its numbers. More than 300 million youths are unable to find jobs; lack of access to education and high rates of school drop outs result in widespread illiteracy, particularly among girls. Health care is inadequate, especially among rural youth. Drug and alcohol addiction, violence, scarcity, misplacement, anxiety, defensiveness, pragmatism, subsistence, crime and suicides involve more young people than ever before. In short, the majority of youth in the world are rural and poor and already parents, lacking sufficient food, safe water, proper housing, health care, basic education and access to employment. They are growing upon the edge of survival without any hope for a decent life, and nothing to enable them to contribute to the development of their community and country. Hence, the young people have lots of problems physical, emotional, social and ethical. This is a result of unsatisfied need response, complexes and consequences of copied western style of life, development, rural/urban drift lack of job opportunities and the world economic situation. All this seems to indicate that society is often failing to provide youth with sufficient guidance and opportunity.

Lack of educational facilities

The educational system is one of the various serious problems concerning youth. If we analyse the types of youth, we will find mainly two categories—one the student youth, the school goers and the other is non student youth including school drop outs. We have a problem of educational opportunities especially for the youth in rural areas, because most universities are located in the cities. The youth, if they are poor, cannot go to these centres of education. There are no proper facilities for their education in rural areas and in slums. Youth services are lacking for all. Hence they claim that they have no opportunities for education. The youth are given mainly a general education and professional education, no priority for vocational training not only at the high school level but at the university level. With large numbers of young people from rural and urban areas clamouring for higher education, there has been a woeful deterioration of academic standards. In Western countries every school and college has counselling bureaus. In our country, this facility is woefully lacking. The education provided in schools and colleges is not job-oriented. Thus youth are facing problems of lack of education and training opportunities, the irrelevance of education of their future production participation in the development of their society. Many students are lost through education after primary years (and only a small percentage of the secondary school students enrol in higher education) as there are not enough schools, or due to their low economic status and to some extent to irrelevance of education for the kind of life they live. Teenage pregnancies leading to a large number of school dropouts or wastage of education among girls. Our educational system does not provide social learning in any organized manner.

Unemployment and under-employment

Youth unemployment, that most crippling road block on the bridge from childhood to adulthood, has reached unprecedented proportions in many industrial and developing countries, particularly in urban areas. And it has struck without discrimination at the educated, uneducated alike. Another important problem is the economic institution increasingly demands a high level of education attainment for participation in the labour force. An adolescent who lacks the basic educational qualifications, greatly disadvantages himself for participation in the labour force. This can be evident from the finding that the unemployed in many parts of the world include a very high percentage of young people—many of them illiterate, most of them unskilled and inexperienced. The dice are already heavily loaded against them. Underemployment is very high in developing countries.

Health problems

The youth everywhere and in developing countries like ours in particular are facing manifold problems in relation to health care opportunities. The health problems of youth consist of, in addition to purely medical problems, problems of medico-social nature like emotional problems, psychosexual problems, delinquent behaviour, addictions, etc. The following medical problems may be considered peculiar to this age group : (i) disorders related to reproductive functions particularly in girls, (ii) communicable diseases especially sexually transmitted diseases, (iii) accidents and certain psychological disorders.

The age period 15—24 years is a period of sexual maturation and transition from childhood to adulthood and youth are further under great emotional, academic and vocational pressures. Hence, maladjustment resulting in psychological disorders, drug addiction, smoking and alcoholism are common in youth. The drug and alcohol taking among youths leading to vandalism and disrespect for elders and authority.

Drug addictions

During the last decade we have seen a marked increase in the use of psychoactive or mind altering drugs in our society. Drug abuse and dependence may occur at any age, but seem to be most common during adolescence and young adulthood. Drug use by youth may serve a number of special motivations. There may be simple urge to rebel against adult constraints by using disapproved drugs, or simple curiosity, due to lack of love and attention of parents or emotional disturbances of varying degrees of severity and an inability to cope with the demands of living or to find a meaningful personal identity.

Smoking

Unwise life styles pose the biggest threats to young people's health. Innovative judgements, a tendency to show off, or the desire to keep up with their fellows—all these incline them towards risk taking behaviour. In many cases, the cigarette is the very first contact young people have with the life styles of adulthood. The percentage of teenage boys and girls smoking is 16 and 19 per cent in United States, 26 and 13 per cent in Papua New Guinea; 14 and 10 per cent in Nigeria, 9 and 6 per cent in India respectively and 46 per cent both for boys and girls in Uruguay.

Drinking (alcoholism)

Drinking in general has increased during the last 20 years, and this increase has been somewhat steeper among young people In the urban areas it is usually the high school, college and university students who take to drink because it is fashionable. Road accidents, many of which are related to alcohol, are one of the major killers and producers of disability in young people. The young also may become violent due to this alcoholism.

Juvenile delinquency

Juvenile delinquency is one aspect of the maladjustment problems, chiefly due to lack of proper family support and educational and recreational facilities. youth turn to gang behaviour and juvenile crime particularly in urban areas. In other words broken homes, parental rejection and faulty discipline and unusual stresses, are mainly responsible for juvenile delinquency.

Crisis of identity

The major task facing youth today is a search for meaningful identity. The search for identity by an adolescent causes a great deal of stress on parents. The problem is further complicated by the constant testing of limits by the adolescents.

Attitude of the adults towards the youth

Most behaviour problems in adolescents are manifestations of an on-going conflict between adolescent and family. The parental rejection is the major problem facing the youth today. Parental criticism of appearance, habits, dress and manners, parental strictness on spending habits and eating habits, parental teasing about friendships, parental comparison with sisters or brothers and with other children are some of the points that bother adolescents most about their parents. The most lacking communication in society is constant dialogue between the old and young In nuclear families, often working parents have little time to spend with their growing children. The youth is compelled to turn to outside groups for understanding and advice. Radio, TV, movies, cheap literature and other media of communication retard his moral growth.

Poor housing facilities

Many youths live in housing which is both overcrowded and hazardous to their health. About 54 per cent, 43 per cent and 63 per cent of the youth live in housing with 3 or more persons per room in Pakistan, Guatemala and El Salvador respectively. Many youth live in housing without access to safe water. The percentage of this in rural and urban areas respectively is 28 per cent and 80 per cent in Pakistan, 11 per cent and 79 per cent in Guatemala; 31 per cent and 90 per cent in Bolivia, 23 per cent and 69 per cent in India, 4 per cent and 87 per cent in Uruguay and 28 per cent and 67 per cent in Ghana.

More responsibility at an early age

For many youths, particularly females, the responsibilities of adulthood come early. The average age of marriage for females is 13 years in Bangladesh, 16 years in Senegal, Pakistan and Nepal, 17 years in Indonesia; 18 years in Kenya and Jordan, and 19 years in Dominican Republic. The early age of marriage is a serious problem for girls leading young girls into adult responsibility without preparation. Added to this, dowry system is affecting young girls especially in India.

Sexuality and fertility

In many societies there are reports of increased premarital sexual activities among ever-younger people, declining ages of first coitus, greater numbers of adolescent pregnancies, induced abortion, and sexually transmitted diseases and an increasing incidence of child birth among teenage mothers. In Jamaica, the problem of adolescent pregnancy is more acute, one in three births are to teenage mothers.

The solution

The major challenges of adolescence are completing the transition from childhood to adulthood, attaining mature attitudes in regard to sex, choosing a vocation and planning further education, searching for the meaning and purpose of life. and finding one's self.

We have not provided our youth with the services which they should have. We need to understand our young people. Youth have more amenities, more choices and greater opportunities but there is more competition, more tensions and more emotional problems. We have to have new insights about the needs of young person, better understanding of the dynamic nature of his personality and the problems of adjustments he faces in order to help him in his growth in self-realisation, in civic responsibility and in vocational and economic efficiency. Youth cannot be seen in isolation, many of the problems facing them are closely linked to their childhood. We cannot address the problems that confront today's youth, appraise their situation, promote policies and define actions relating to them without taking a look at the all-embracing nature of their development, their care and upbringing before and through adolescence

Despite increasing attention to youth research and programme development the record is far from consistent. So, we have to do more for them than it has and make a special effort to understand their problems. We have to tackle some of the common problems of youth such as youth unemployment, under-employment, issues of regional and international peace and security, issues of education and training, issues of family and community life, problems of equality for young women, health, housing and environment issues; crimes and problems resulting from migration.

The primary focus should be on activities at the national and local levels to "address and deal with specific needs and aspirations of youth".

A new education policy !

At present a new system of education is needed So there should be strong educational reforms. For this we need a proper guidance system in our schools and colleges. High priority should be given to the education and to technical and vocational training. By extending the availability of education for all and compulsory education for children, we can improve the educational status of youth. Counselling and guidance services should find high priority in our educational planning. Special programmes for removal of illiteracy among non-student youth are to be taken up urgently.

Other Do's and Don'ts

It is important to take into account the less fortunate youths who are out of school. They could be reached in youth gatherings or homes and helped to gain back their confidence through, for example, adult literacy programmes or vocational training

The employment opportunities should be increased and there should not be job discrimination against young workers. It is urgent that our young people are given guidance in choice of profession The young people, and particularly the girls, need to be given an opportunity to contribute to the manpower and econo-mic resources that are so vital to their nation development, and should not be burdened down wi sexual and parental responsibilities before the appointed time.

Youth whether student or non-student yout require health education regarding nutrition, exercis personal hygiene, disease prevention, etc., family lif education and counselling services. Parents, teache and social leaders have to play important part i these activities.

Promotion of sports and recreational services fo youth in general are to be taken up. The co-operativ effort of government and voluntary agencies is require for this purpose.

There should have to be more strict legislatio reducing the availability of alcohol, especially fo young people below certain ages, and it should b implemented more effectively. If age is characterize by caution, youth is characterized by a love or ris taking such impulses can be guided to take positiv forms—sports, outdoor adventure, social experiment rather than towards the negative habits of cigarett smoking, abuse of alcohol or dependence on othe drugs.

The youthful energy and drive can easily be mis directed into resentment or revolt, if parents an adults, in general do not find ways and means o communicating with teenagers and building up constructive partnership. Well planned camps an youth services bring youth and adults close in natural wholesome way. Through these are buil bridges of understanding over which not only yout guidance can move along with ease, but friendship develop between the young and older adults.

There is a mounting need for imparting home an family life education to our young adults. Yout services should include sex and health education. Th young people need accurate scientific informatio professional counselling and social services as well a medical and health programmes specially designed t deal with their need for sexual expression. There is need for better trained, adolescent-oriented servic personnel who can relate to their young client perceptions, fears, attitudes, and aspirations.

Marriage counselling is another neglected area o youth education. Education at college level shoul include an elective course on "The Home, Family an Responsible Parenthood" to help youth in this mos important area of life

Youth needs guidance for leisure time Our yout have the utmost leisure and they have the most wastе ful of time Parents and educators should recognise thi as an important guidance service that we need to pro vide for our youth to save them from wasting their tim and talent.

(Continued on page 30

Crop insurance, a need fulfilled !

T. V. Satyanarayanan

The author here says that with the introduction of crop insurance scheme from the Kharif this year, the country has entered the second phase of green revolution. It will not only provide a measure of financial support to the poor farmers, especially those cultivating dry lands, in the event of a crop failure, but also restore their credit worthiness.

THE NEWLY INTRODUCED comprehensive Crop Insurance Scheme should instil a greater sense of confidence into the farmer who faces innumerable risks and uncertainties from the time of sowing to that of harvest. Despite the growing strength of Indian agriculture, weather still plays a crucial role in the production of foodgrains. Drought, floods, cyclones and hailstorms take a heavy toll of crop, life year after year.

In the last financial year, for instance, 32 million hectares of cropped land in eight States was affected by drought. In the two previous years, the extent of damage done to crops by drought was even greater In addition, floods, which are a regular visitor immediately after the rains, left a trail of death and devastation. It is estimated that 40 million hectares of land in the country are flood prone. In the last three years, the fury of the swollen rivers caused extensive damage in cropped areas ranging from six to seven million hectares.

In all these natural calamities, the hardest hit are the small and marginal farmers, who, being economically weak, do not have the necessary risk-bearing capacity. The insurance scheme, which will be implemented from the current kharif season, is designed to help particularly these weaker sections of the farming communities.

The scheme in all pervasive

The scheme is for farmers cultivating not only the principal crops of rice and wheat, but also millets, which are mainly dry-land crops and pulses and oilseeds, whose production needs a big boost. It will cover all farmers who are getting crop loans from cooperative credit institutions, commercial banks, and regional rural banks. The insurance coverage, in fact, is built into the crop loan. The General Insurance Corporation or G.I.C will operate the scheme in collaboration with the State Governments.

According to the details worked out, the sum insured for each farmer will be 150 per cent of the loan disbursed to him during the insured season Estimates show that the cost of cultivation of the five crops is nearly 150 per cent of the present scale of financing It does not take into account the amount paid by the farmer as land revenue, interest on fixed assets, consumption loan required till the next harvest and the cost of his own labour If all these costs and an element of consumption loan are included, the cost of cultivation would come to more than 200 per cent of the scale of financing

The insurance premium will be two per cent of the sum insured for rice, wheat and millets, and one per cent of the sum insured for pulses and oilseeds The insurance charge for payment to the GIC is to be deducted at the time of disbursement of loans For small and marginal farmers, 50 per cent of the insurance charge will be subsidised by the Central Government and the State Governments concerned, both sharing the burden equally

A separate fund for insurance

The GIC will set up a separate fund known as the Central Crop Insurance Fund Its main functions·

would be to receive crop insurance premiums from the financial institutions and issue policies, settle claims promptly, and collect and analyse statistical data received from states.

The states will set up a State Crop Insurance Fund, each with an initial capital of one to two crore rupees to be contributed equally by the State Government concerned and the Central Government. The size of the fund for each state would be worked out in consultation with the State Government, the Ministry of Finance, and the Ministry of Agriculture.

The states will set up a State Crop Insurance Fund, of 33-1|3 per cent. One of its functions would be to administer the inflow by way of premium and outflow by way of claims. Besides, it would ensure proper and adequate number of crop cutting experiments and send the yield data for each crop and each defined area to the G I C.

G.I.C, the leading insurer, will establish crop insurance cells at the state capitals and maintain close liaison with the state governments, Reserve Bank of India, the National Bank of Agriculture and Rural Development, State Co-operative Banks commercial banks and the regional rural banks.

Procedure for implementation

For this scheme, which is area-based, an elaborate procedure has been laid down for determination and payment of claims. On the basis of crop cutting experiments, if the actual average yield per hectare falls short of the guaranteed yield, all the insured farmers growing that crop in that area would be considered as having suffered yield losses. They would therefore be compensated. Within a month after crop cutting experiments of each insured crop, the State Government would be required to provide to GIC the data of yields for the defined area together with the causes of the loss.

On receipt of yield data from the State Government, GIC will identify the defined areas and crops for which claims become payable. It will then determine the amount of claim payable to each bank in each defined area. GIC will then pay to the banks, and the designated nodal points of the commercial banks, its share of the claim directly Simultaneously, it will provide full details and advise the State Crop Insurance Fund to enable it to settle its share of the claim. On getting the claim remittance from GIC and the State Crop Insurance Fund, the bank will credit the claim amount to the account of the loanee farmer

Insurance against multiple risks

The scheme covers all risks which the farmer normally faces, barring war and nuclear hazards. The Central Government's liability on account of the subsidy to small and marginal farmers during 1985-86 is estimated at 4.50 crore rupees. An equal amount would be borne by the State Governments

The Union Agriculture Ministry will periodically review the scheme, while the GIC will undertake a mid-term assessment of the financial results during the Seventh Plan. The scheme is expected to be extended to other major crops later after the review.

The scheme, in fact, is not entirely a new one. A pilot crop insurance scheme was first taken up in the country by GIC in collaboration with the State Governments six years ago. The present scheme is an improvement on the pilot scheme, which has now been withdrawn

The scheme has come at an appropriate time as the country has entered the second phase of the Green Revolution, when greater emphasis is being laid on increasing production and productivity in the hitherto agriculturally backward areas The risks and uncertainties for the farmer are much greater in these areas, which are mostly dry-lands The scheme will not only provide a measure of financial support to the poor farmers cultivating these lands in the event of a crop failure, but also restore their credit-worthiness

Need to accelerate tempo of production

No doubt, the latest technological advances in agriculture have considerably reduced the farmer's risks and imparted some stability to production. But much more needs to be done to accelerate the tempo of agricultural progress. New policy thrusts and bold initiatives are necessary for continuous improvement of our performance on the farm front. One of our major challenges is to raise the productivity of rainfed areas, whose production potential is very vast. Equally important is the task of raising the yields of pulses and oilseeds, since the output of both the crops is subject to large variations. Sustained improvements in yields and production of these crops should receive high priority.

Research and extension hold the key to raising the yield levels of various crops The spread of technology at present is not uniform all over the country. As an expert group has recently noted, only better endowed areas have been able to adopt the technology. In other areas, it is necessary to propagate more location-specific and relevant technology, taking into account the environments in which the farmer takes decisions, particularly the risk factor. All this means a strong extension network and greater linkage between research and extension. In the coming years, we need a stronger and vigorous extension machinery for faster spread of research and popularising among the farming community beneficial schemes like crop insurance. □

Harnessing tidal energy!

P. Bhattacharyya

Tidal energy, which has a vast potential in meeting the energy needs of the people living along the sea, remains to be tapped in the country. The author here highlights the efforts made by some countries, particularly, the Soviet Union, in harnessing this vast energy source. He feels, in India, to begin with, tidal power can be developed in the gulfs of Kutch and Cambay.

THE OCEAN COAST is washed twice every 24 hours and 50 minutes by the tides At places its height reaches 16 m. The energy potential of the tides is estimated at 1 5-2 million MW and its part that can be harnessed, at 350,000 MW, resulting in 1,000,000 MWh of electricity a year. True, tidal energy cannot play a decisive role in the world energy scene as it can meet up to only 12 per cent of the present power consumption in the world Yet its potential is not negligible either. Besides, high capacity tidal power plants (TPP) can save many million tons of fuel and will not pollute nature.

The main problem, however, has been to find out thè estuary of the river Rance in 1961—1967 It pronomenon, which remains unchanged over the passage of time.

First TPP in the world

The first TPP of the world was built in France on the estuary of the river Rance in 1961—1967 It produces only 240 MW of electricity. But its completion and operation proved in practice the very possibility of the commercial utilisation of tidal energy But the TPP at Rance failed to become economically viable as the electricity generated there cost 2.5 times more than that produced at a comparable river power plants.

One of the main reasons of such high cost of the electricity produced at Rance TPP lay in its method of construction itself. Building a coffer-dam and pumping out the water from the site of the Rance plant cost much time and money.

The Kisalaya TPP

A TPP completed in 1968 (a year after that on the Rance) in the Bay of Kisalaya, the Barents Sea (the Soviet Union) was the second in the world But the TPP in the Soviet Union considerably differed from the Rance TPP. It was erected using a floating construction method. This not only saved the huge cost, which the Rance TPP incurred on account of building a coffer-dam and pumping out the water but also made it possible to shift the construction work from the difficult terrain conditions of the coast to a nearby maritime industrial centre

Floating method

The floating method is not something entirely new It has been used in constructing underwater tunnels, piers, floating docks and in recent times in putting up oil platforms. However, it has never been used in building any hydropower projects. The reason is obvious. The power houses, exposed to heavy hydrostatic pressure, have been constructed from massive ferro-concrete blocks. In contrast, under the floating method, the power house has to be light enough to be floated

The Kisalaya TPP, 36 by 18 by 15 cubic metres, was constructed from thin-walled ferro-concrete in a building dock near Murmansk, Kola Peninsula. After a 400 KW hydroelectric unit was installed, the power house was towed into the Bay of Kisalaya (100 km of Murmansk). There the Kingston valves were opened and the power house was placed on a foundation.

During the past 17 years of functioning the Kisalaya TPP has proved the correctness and reliability of its engineering practices. Today, the small TPP forms the basis for projects of big TPPS across the world.

A similar structure has been designed for large TPPs in the Bay of Fundy in Canada. It also forms the basis for a TPP project on the Severn in Britain. The floating method of building TPPs has come to be known abroad as the Soviet method.

Single-pool TPP

Soviet contribution to the TPP construction is not limited only to the floating method. As is known, in the earlier projects steady functioning of a TPP (tidal variation and the difference between the low and peak demand periods of consumption) had to be assured with expensive multi-pool system.

But according to the Soviet concept, guaranteed but intermittent energy fluxes should be made part of complexes which would combine TPPs, river hydropower station with large storage lakes and high-power thermal (atomic and coal-based) electric stations. This would make possible for the reversible generating units of a TPP to absorb the surplus night energy of thermal power stations by pumping water to the TPP storage pool and restore it to the system in day time when energy consumption increases This makes the expensive multi-pool system unnecessary. The TPP, which contributes its energy to the sum total generated by the complex, can operate with one pool formed by blocking a large sea-gulf.

The concept of single-pool TPPs forming part of interconnected power system has also gained world acceptance. Such is the design principle of the Canadian TPP projects at Cumberland (1.2 million kilowatts) and Cobequid (for million kilowatts). Construction of these TPPs has been found to be economically feasible

Planning big TPP

The Soviet Union is planning to go for the TPPs in a big way. Surveys conducted by the Soviet specialists have demonstrated the possibility of building TPP in the White Sea and the Sea of Okhotsk where the tidal range is 9 and 13 5 m respectively. Pre-design developments and cadastral evaluations proved the possibility of erecting a TPP in the Mezen Bay of the White Sea. Its 92.7 km dam, crossing the bay between the capes of Abramov and Mikhailov mainly in shallows, will close off a water area of 2,3300 km². Two hundred floating four-set power generating units are to be installed in the deepest place of the dam, thus dispensing with the expensive underwater earth-removing operations. The dam will be formed by directed explosion of underground charges The Mezen TPP is estimated to produce 15,000 MW or 50,000,000 MWh a year. A 8,000 MW TPP planned for the Gulf of Tugur, the sea of Okhotsk, will annually generate 24,000,000 MWh of electricity. The Tugur TPP barrage, 37-km-long, will close off a water area of 1,800 km. This sea's other gulf, Penzhina, is still more promising. With a 95-km-dam built here between the capes of Povorotnyi and Dalniy, a 100,000 MW TPP can be erected in the gulf, producing 3[illegible] million MWh. As an alternative to the above TPP, 35,000 MW plant is conceived to be built here on t[illegible] site between the capes of Sredniy and Vodopadn[illegible] with an annual output of 100 million MWh.

The sea is usually rough here with waves being [illegible] metres high. It is so bitterly cold in winter that the te[illegible]perature often falls to 50°C below zero. For 200-o[illegible] days a year the sea is covered by ice-fields, about 2 [illegible] thick. The Penzhina power house will have the slopi[illegible] ceiling reducing the impact of ice floes.

The Gidroproyekt Institute together with the Pa[illegible]fic Oceanology Institute of the Far Eastern Resea[illegible] Centre, the USSR Academy of Sciences, explore [illegible] sites for TPP and develop their designs and co[illegible]struction technologies

New use of energ[illegible]

The Penzhina Plant's huge capacity of 100,0[illegible] MW poses a problem whose solution is vitally i[illegible]portant to the plant itself. The point is that its plan[illegible] vast power supply cannot be entirely consumed [illegible] the local traditional users even in the foreseea[illegible] future. Hence new energy-intensive users are to [illegible] found, for example, electricity can be used to th[illegible] permafrost. This, in turn, can greatly contribute [illegible] the better mining in the area. The idea has also b[illegible] conceived of using its power for hydrogen producti[illegible]

The construction of the Mezen and Penzhina T[illegible] necessitates handling a number of integrated proble[illegible] since plants of such high capacity have never b[illegible] built in the world. The first of them relates to pow[illegible] generating sets, the heart of any TPP. High power [illegible] be produced by TPP at low head only by install[illegible] hundreds or even thousands of sets. Economically [illegible] is not viable, and their number should be reduced [illegible] enlarging as much as possible the diameter of a t[illegible]bine wheel. The problem of installing a high-po[illegible] generator in a streamlined capsule is now being sol[illegible] by the Leningrad Metal Works, Gidroproyekt In[illegible]tute and the All-Union Research Institute of Elec[illegible] Engineering which are developing a unique set wh[illegible] turbine's wheel will be 10 m in diameter.

A large amount of sets needed for TPPs (800 [illegible] the Mezen and 4,000 for the Penzhina) necessit[illegible] creating special capacities for producing them.

No, easier is the task of putting into batch prod[illegible]tion gigantic floating units whose prototype is [illegible] units of floating drilling rigs and dams now be[illegible] built to safeguard Leningrad floods. It will also [illegible] equally difficult to build underwater foundati[illegible] and install the units.

Field tri[illegible]

The Kola pilot TPP is planned to be built for v[illegible]fying in field conditions novel design features. [illegible] engineering and economic estimates for its constr[illegible]

tion were completed in 1983. The design of this plant, seen as an intermediate one between the Kislaya Guba and the Mezen, provides for the dam, made by directed explosion, to close off a water area of 5 km. Two 19 MW capsule sets (prototypes of the Mezen TPP sets) will be installed in the plant. A two-set unit will be assembled in dock near Murmansk, then towed to its site and submerged there. It will produce some 50,000 MWh a year. The Kola TPP will pave the way to the Mezen high-capacity TPP. The research necessary for designing the latter is being carried out simultaneously with that on the Penzhina plant, which will in the near future determine its basic parameters, design and construction technology.

Relevance for India

The impressive Soviet progress in the construction technology of TPP has important relevance also for India at the present juncture when it is concentrating on the exploration of renewable energy sources.

According to Government of India sources the possible areas where the tidal energy is fairly high and where tidal power can be developed are in the gulfs of Kutch and Cambay in the West coast and in the Sundarban areas along east coast.

A proposal to complete investigations and studies to establish the feasibility of power generation from tidal waves in the Gulf of Kutch at an estimated cost of Rs. 218 lakhs has been approved. The investigation formally inaugurated in January 1982 will be spread over a period of 5 years. It will include short time field investigations consisting of deep sea and shallow water tidal observations, hydrographic and pond survey as also laboratory studies including mathemetical modelling studies, physical modelling studies, physical modellinfi, closure studies, energy compensation and integrated system operation studies.

The investigation will also embrace long-term field investigations covering foundation investigations, collection of long-term data on tides, current, silt charges and waves of selected localities, survey of suitable construction materials and ecological studies.

All this makes it very clear that building of TPP involves not only huge cost but also very sophisticated feasibility studies. The Government of India thus may skip many of the time and labour consuming intermediate stages by availing of the Soviet expertise in the field. This will also free it from the sole dependence on the concern Electric de France (Paris) connected with the TPP for consultany services.

It is needless to say that as in many other fields there is great possibility of Indo-Soviet cooperation in this yet untapped area also. The Indian peninsula flanked by the Arabian Sea and the Bay of Bengal in the west and the east and buffetted by their tides no doubt holds great prospects for utilising tidal energy through TPPs.

Modern technolgy for steel plants

THE COST EFFECTIVE proven technology of direct Reduction Electric Furnace Route (DR-EAF) of steel making using sponge iron will be adopted for the proposed steel plants at Vijayanagar in Karnataka and Daitari in Orissa. This process of steel making can utilise non-cooking coal. The suitability of this technology to raw materials available in the country has already been established.

Metallurgical and Engineering Consultants (MECON), who were appointed the consultants for both the projects have submitted the report for implementation of the first phase of the Vijayanagar Plant with a capacity of 1.5 lakh tonnes of sponge iron and 2.1 lakh tonnes of finished steel. The feasibility report for the first phase of the Daitari steel plant has also been submitted to the project authorities.

The Steel Authority of India Ltd. (SAIL) is considering setting up of a pilot plant for judging the suitability of KR technology of steel making in the country. The plans for renovation and technological upgradation for steel plants at Durgapur, Rourkela and Burnpur (IISCO), already prepared, are under various stages of consideration. The schemes envisaged restoration of their rated capacity by adoption of appropriate and cost effective technologies. Time frame of their completion would be worked out and necessary investment decisions made after the finalisation of the Seventh Plan allocation for the steel sector. □

Towards eradication of illiteracy

THE PROGRAMME of adult literacy has to acquire dimensions of a mass campaign if the goal of eradication of illiteracy by 1990 has to be achieved.

In view of the national commitment to the eradication of illiteracy, the active support and involvement of individuals and institutions is of prime importance. The spirit of national movement is being rekindled for this national task.

For making the programme of adult education popular among the masses, India needs to create a strong demand for it. This aspect should be treated as a very important part of the campaign.

Universities and colleges are being involved in a big way in the task of eradication of illiteracy as one of their regular co-curricular activities. Efforts are on to bring about a clear-cut, concrete and viable strategy of total coverage of illiterates in the 15—35 age group under the Adult Education Programme in the Seventh Five Year Plan. □

Effective administration, a myth !

Bhushan

The author, in a humorous style, tries to expose inherent weaknesses and lacunae in administration in general which often create a wide gap between theory and practice. Policy decisions taken at a higher level are not only bypassed but constant effort is made to locate loopholes to frustrate the objectives of a particular scheme or programme.

"THE POST OF DIRECTOR is lying vacant for such a long time. Why don't you fill it up by ad hoc appointment of Mr. 'A' ?" the boss asks Mr. 'X'.

"Sir, the recruitment rules for the post have been referred to the U.P.S.C. I thought the proposal for appointment should be put up only after the recruitment rules are finalised". explains Mr. 'X'

"Oh, no, Mr. 'X'. The problem with secretariat officers is that they are so rule-bound. They don't want to see the problem in a wider perspective, in the overall interest of the organisation", grumbles the boss.

"O.K. Sir, I will put up the proposal immediately". Mr. 'X', with full reverence to the authority, sends the file up, suggesting appointment of Mr. 'A' as Director on ad hoc basis, pending finalisation of recruitment rules. The proposal is readily okayed at all the levels of the secretariat hierarchy.

Precedent, a basis

Mr. 'X' asks his staff to review the position for all the categories of employees and to put up proposals for ad hoc promotion, pending finalisation of recruitment rules.

Next goes the proposal to appoint Mr. 'B' as Investigator on ad hoc basis.

The boss sends back the file with marginal remarks, "Please speak".

So Mr. 'X' goes to the boss, fully prepared to listen.

"Mr. 'X', what is the great hurry to fill up the post of Investigator ? Let the recruitment rules be finalised at least", says the boss.

"Sir, only a week ago you had asked for a similar proposal for Mr. 'A'. The proposal has since been approved. So I thought, similar action should be taken for others too. And Sir, in the instant case, Mr. 'B' has been stagnating in the lower position for 20 years. If we can give him a little benfit without going out of way, what is wrong ?"

"Oh Mr. 'X', I don't know, how to explain things to you! You are incorrigible ! You want to equate horses with asses ? Take this file back. Do as I say. Don't waste my time now". The bitter pill of plain truth was unpalatable to the boss

Mr. 'X' comes back. He has not only lost the battle, he has also lost sense of direction. He doesn't know how to function in future The spirit of young enthusiast and idealist has been shattered.

To do or not to do !

"You may compromise with inefficiency at times, but don't ever compromise with lack of integrity. Be honest in your dealings and enforce honesty on others too", Mr. 'Y' sermonises his subordinates.

Mr. 'Z', one of the disciples of Mr. 'Y' remembers the sermon by heart and tries to practise it in his day-to-day life. A daily wager, appointed for a period of three months, manifests dishonesty in his work. The lack of integrity is well-proved and, therefore, Mr. 'Z'

terminates the services of the daily wager in the second month of employment. The desperate daily wager approaches the honourable representative of people, the Minister, in search of "Justice". The Minister's spokesman, his P. S. rings up Mr. 'Y', and recommends the case of the poor daily wager

Mr. 'Y' calls for the file, orders reinstatement of the daily wager and also, in his zeal to please the Minister, condemns the action taken by Mr. 'Z'.

Mr. 'Z' feels cheated. He doesn't know whether to uphold the cause of honesty or dishonesty. He has lost the moral courage to take decisions. A few more incidents of this type are enough to convert a staunch, upright, honest and well meaning man like Mr 'Z' into a spineless, indecisive and weakling bureaucrat.

Experience that counts !

Mr. 'C', on return to his parent office, from deputation represents that in view of his experience and expertise, he may be appointed to the higher post. The senior boss vaguely expresses his inclination to help Mr. 'C'.

Mr. 'D', who is the middle level officer, dealing with the case, feels that it is just not possible to accede to the request of Mr. 'C', because there are 20 persons above him in the seniority list, whose rightful claims cannot be ignored. He does not want to lose administrative propriety and go against his better judgment. He, therefore, quotes all the rules and regulations in support of his view and expresses his inability to accede to the request of Mr 'C'

The blood of the senior boss boils to see the file. He orders that Mr. 'C' be promoted immediately, giving some lame, unconvincing reasons. He also orders the transfer of Mr. 'D' to some God-forsaken place as a reward for listening to the dictates of conscience and sticking to rules.

Policy versus practice

To give a different example an ambitious programme is launced by the Government for the proper development of a vast region The objectives are defined in a High-level Meeting where all concerned are present. For pursuing the programme in the right direction, the officers are supposed to keep the objectives of the programme in mind and see whether the schemes proposed to be undertaken conform to the objectives

The implementing authorities of the constituent States theoretically agree to abide by the objectives but there is a wide gap between the theory and the practice They try to introduce schemes which do not have even a remote relevance to the objectives of the programme. When the officers of the Central Government try to put their foot down, to make sure that the objectives of the programme are not lost sight of, the State Governments raise the level and the schemes which could not be approved at the official level, are accepted at the political level.

The zeal of the officers, dealing with the programme, gets dampened. They will not exert in future to the extent they did in the above case, to uphold the objectives of the programme. No wonder, the programme when implemented, will be absolutely different from the one conceived.

Given above are a few glimpses from the realm of Government offices. They are not imaginary fabrications, they are part of the daily routine. All Government servants go through similar experiences in their day-to-day work-atmosphere.

Any administration, which passes through the vitiated atmosphere, quoted above, is bound to be vitiated. The healthy spirit, which appreciates honest, objective, result-oriented approach has vanished from our offices; it has been replaced by the spirit of cut-throat competitions for seeking undue favours for material advancement at the expense of the cherished values of honesty, integrity and objectivity.

In the prevailing demoralising atmosphere, any talk of effective administration is nothing but wishful thinking ; it is nothing but "the desire of the moth for the star of the night for the morrow."

Administration is a part of the social system It is a mirror of our society. It is, therefore, not possible to overhaul Administration in isolation Administration, as it is on date, is reflecting the chaos of values in the social system. The social values will never move in the desired direction as a process of evolution. The Administration will not, therefore, evolve itself into an effective organ by gradual process of development. What is required is a revolutionary change where the old, rotten, devalued order of the day yields way to a new one with the right sense of values. □

(Continued from page 23)

Conclusion

With our awareness now of the multiple problems that the adolescent faces, we are in real danger of being pessimistic about them. Adolescents are going to struggle through their adolescence and a large percentage of them are going to reach maturity and as a result of that they will make the world better than the one they entered. Youth can only motivate the youth. The Nation's prosperity thus depends to a considerable extent upon how the youth are organised, mobilised, trained and guided. The present adolescents are not only questioning and protesting and challenging but are potential agents of social change.

There are no clear-cut answers and solutions that would be applicable to all situations ; each country and community must decide and act for itself. But act it must, for any further delay would only hurt our adolescents in the long run. □

Controlling guinea-worm disease!

Raghu Shergil

Water contamination is the source of the spread of guinea-worm disease. The country will be able to wipeout this festering disease if we could provide clean drinking water to all the problem villages. The national programme for eradication of this disease launched four years ago is showing encouraging results, says the author.

SINCE 1980, almost silently, the National Guinea-worm Eradication Programme has been going on in 87 districts in seven states of India covering 13,000 villages in 568 block and a population of nearly 14 million. The states involved are, Rajasthan, Madhya Pradesh, Andhra Pradesh, Gujarat, Tamil Nadu, West Bengal.

What is guinea-worm disease ? How does it affect human beings ? And what does it mean in social and economic terms to the country as a whole ?

Guinea-worm is a festering disease caused by a tape worm which attacks the lower legs causing acute paid and wounds, disabling the victim for nearly six weeks. In between he suffers acute pain till the worm comes out. Repeated attacks can disable a person for months together rendering him unfit for any physical activity. Since the disease attacks human beings in the months of April, May and June, it means a loss of precious productive days during peak harvesting season in the villages. An idea of the social and economic cost of guinea-worm disease can be had from the fact that the annual loss of production is nearly seven million mandays. In financial terms, it means an annual loss of nearly Rs. 110 million in production.

The programme is being implemented by the Union Health Ministry through the National Institute of Communicable Diseases (NICD) and is being financed by the Centre and States on 50 : 50 basis. The remarkable thing about the programme has been that it is being implemented through the existing primary health care machinery of the states. No extra staff or organisation has been created for the purpose, as is the usual practice.

The main plank of the programme is the interruption of the transmission cycle of the virus through uninterrupted supply of clean drinking water. Where it is not possible to provide alternative clean drinking water source in place of the existing ones, chemical treatment of the existing ponds and other water heads is provided. Besides, people are educated on the precautions to be taken to prevent further transmission. It is pertinent to note here that the infected person is often tempted to keep his legs immersed in water, thus infecting the water.

In the first stage of the programme, para-medical staff was asked to make house to house surveys during their routine visits to the villages. Where in a village even a single case was reported during the year, it was listed as an affected village. Thus on the basis of field reports by the para-medical staff of the PHC, a list of 13,000 villages was prepared for intervention.

Water contamination, it may be mentioned, is the only source of the spread of the disease. There is, according to NICD scientists, no known human reservoir of the disease which has been reported from 21 countries of the world, including India, Pakistan, Bangladesh, Saudi Arabia, USSR which has packets of disease succeeded in eradicating it over 30 years ago.

Once eradicated, the disease does not reappear in the same area. It has not so far reappeared in

(Continued on page 34)

BOOKS

Human rights

Politics of Human Rights and Civil Liberties : A Global Survey By Attar Chand, UDH Publishers, Delhi, 1985, Rs. 250, pp. 378.

"IF PEOPLE ARE ALLOWED to starve and die of hunger this is a violation of human rights, the right to food. The arms race particularly the manufacture and stockpiling of nuclear weapons, is a violation of another human right-the right to life", says Paul Lusaka, President of the United Nations General Assembly in his foreword to this learned volume written by an eminent political commentator, social scientist and above all, an author par excellence. The history of Human Rights goes back to social organisation in ancient societies. Ultimately it was always the question of human equations and acceptable standards of justice. It is the same today, but the weight of public opinion and human consciousness provides a climate for more conducive position to human right and civil liberties than ever before.

Dr. L. M. Singhvi, a well-known authority on Constitutional and International Law, writes in his comments that "Human rights bibliographies open the panoramic vista of human experience. Mr. Attar Chand's book spans the most significant centuries, beginning from the Magna Carta signed in 1215 A.D." Indeed, the concept of Human Rights is based on the principle that man must not only have the right to live, but live in freedom. To protect his freedom he should be assured of certain basic rights like the right to equality without any discrimination on grounds of race, colour, sex, language, religion, political or other opinion, property, birth or other status. Similarly, he should be assured of the right to life, liberty and security of person, freedom from arbitrary arrest, the right to a fair trial and the right to be presummed innocent until the contrary is proved.

This excellent book marks the reception in global thinking of the doctrine that economic and social rights are at least as important as the civil and political rights of Henkin's 'International Bill of Rights'. Because of the thrust of the human rights argument is to reverse the norm of non-intervention in the domestic affairs of states, the book under review poses some interesting questions.

It has to be admitted that human rights has intellectual and political weaknesses. This weakness may be expressed by relating its ends to its means. The size of the task is daunting.

Besides these civil and political rights, citizens need to be assured of some economic rights like the right to work, to education and so on. Perhaps, the developing countries of the world are still in a dilemma to provide these rights and to accept them as fundamental for the simple reason that the wherewithals to provide the same are not measuring the demands. The author has made a global survey which is unique for the documentation he has provided. He has painstakingly given the text of selected documents also including the Magna Carta, Bill of Rights, International Convenant on Civil and Political rights, New International Economic Order and so on. These have certainly added to the utility of the book for researchers to delve deep in their analysis.

Mr. Attar Chand has traced the historical background of the development of the concept of human rights. In his words, "One of the outstanding accomplishments of the United Nations has been the coming into force in 1976 of legally binding international agreements for the protection and promotion of human rights. These are the Covenant on Economic, Social and Cultural Rights, the Covenant on Civil and political Rights and the Optional Protocol thereto". While applauding the role of United Nations and Other bodies, the author has a caveat to make. "All honest people on earth must call on the governments which have so far failed to ratify the international covenants and UN conventions on human rights to do so immediately and to assume the appropriate obligations, and to stop avoiding international cooperation in this field". Ever since the Universal Declaration of Human Rights was passed in 1948, there seems to have been no hesitation in flouting them despite several subsequent covenants and what have you The author, in this context, poses a pertinent question : "Have these rights been realised anywhere ?"

Navin Chandra Joshi

Rural Development

Village Development in India—a sociological approach—by G.R. Madan and Tara Madan, Allied Publishers, New Delhi, Rs. 90, pp. 390.

Agricultural Mechanisation and Social Change in India—A study of Chambal region—by Rita Khanna, Uppal Publishing House, New Delhi, Rs. 125, pp. 201

VILLAGES ARE HEART and soul of India. Systematic development and overall progress of the rural society depends upon numerous inputs. Since the early 1950s, government's multi-faceted schemes have though brought in kaleidoscopic transformations among villages, yet a lot remains to be achieved. Six five-year economic plans and a plethora of programmes are still on anvil for village uplift but we have miles to go to make a dent on the economic, social and educational development in the Indian countryside.

To study exhaustively the entire development process in the villages in any situation, by and large the following factors will have to be taken a serious notice of : Agriculture—land, soil, water management, transportation, storage and marketing, social forestry. Industries –cottage, small-scale and medium which form the main occupation of the artisans and population engaged, other than agriculture. Education and training—primary, secondary, non-formal, adult, and other variants of learning which have to permeate through all activities and cater to all age-groups. Housing roads engineering and energy And Health, family welfare, hygiene and medical care.

In the Village Development in India, the authors have presented a composite, well structured and scientifically planned analysis of the problem. It is a comparative study of the total development of two U.P. villages with a population of about 500 each. One village is designed as a "progressive" and the other "backward", or less developed

The Indian rural situation has become fairly complicated, and change is visible with the introduction of modern technological methods in farm operations, new means of communication, villagers increasing interest and desire to go in for education and availability of social · services to improve quality of life. Consequently, a distinct revolution in attitudes of the rural masses and keenness to adopt better ways of life, willingly accept innovations and new leadership patterns have emerged. The investigations for data collection were conducted in 1965-66. The results were rechecked in 1979-80, with a view to interpreting the changes occurring in between and their impact on the people at various levels.

The study found that the people are more favourably disposed to need for adult education, family planning and modern methods of medical treatment, and the eradication of such social customs as the dowry system. In short, they are "oriented towards change and development." And almost identical results were found in case of development of agriculture, provision of credit, input supplies and marketing the farm output. However, it was discouraging to learn that though a number of social changes were taking place, some of the deep-rooted customs and beliefs still prevailed These were : dowry (over 60 per cent in favour), more in favour of education of boys than for girls, yearning for a male child in the family, undue importance to caste feeling and the values they hold about prestige in community.

The block development officer recognised that the development works in villages have progressed mostly due to people's own efforts. It was also asserted in no uncertain terms that "delayed sanctions and untimely supplies have been largely responsible for the retardation of progress in the villages," increased paper work has adversely affected the progress of work in the fields, that officials have been less zealous for work than they were a few years ago and that they don't care about the common man.

The study makes two paradoxical revelations : the community development programmes have made the villagers too much dependent on outside agencies, and in this way stifled their initiatives, and secondly, that everyone, poor or rich, can benefit from this programme and also that high hopes and aspiration instilled by the community development programme in the minds of the people have remained unrealized to a large extent, creating frustration in their minds.

The study conducted some two decades ago has not fully presented a comparative portrait of the infrastructure before 1965 and after 1980; whatever has been stated is too sketchy, and does not lead to firm conclusions. Although the authors have adequately reflected on the failings of the development network, they have not offered concrete suggestions how these could be remedied Besides, the levels achieved in village development have not been fully evaluated in terms of gains trickling down to the lowest rung of the ladder. In any case, the project results should be widely disseminated so that wrongs are corrected and loop holes plugged in the interest of majority of people who are below the poverty line.

It should not be forgotten by the authors that rapid population growth in the villages under study also made a perceptible difference and in fact negatived the benefits of the several welfare programmes. The results of the Madans' research on the development in villages should be made a compulsory reading for those involved in the formulation and implementation of rural areas. Some of the statements are too generalised and complicated further by statistical tables

Ms. Rita Khanna's study on the social change brought about by agricultural mechanisation in the Chambal region had a very small sample to be able to arrive at firm and concrete conclusion. Only 100 respondents from five selected villages of Madhya Pradesh's Morena district may not reflect a true picture in a variegated and diversified area under study. The figures and statistical representations don't tell the whole story of the backwardness and will not adequately reflect the social change effected in the Chambal region.

This study also reveals that though people in the region remain traditional and not much affected by increase in the incomes by mechanised agriculture, there are clear indications that things are changing in certain sector. For example, villages, attitude towards education is favourable, status of family showed positive changes for the better freedom of women was seen to have increased substantially since the advent of agricultural mechanization.

However, trends of social systems such as dowry, purdah, caste, belief in rituals and untouchability have remained "unaffected" and continue to reign supreme in rural areas. It is also disheartening to learn that increase in agricultural output and consequent prosperity has made little dent in broadening the horizons of villagers in the area.

The efforts are therefore futile and conclusions haphazard. Moreover, the literature scarce is too brief and sketchy and also not properly elucidated. The author has not cared to ensure correctness of language also (the word "intention" has been spelled as "intension"). In chapter 4 also, there are numerous errors.

It seems the author has rushed her script for publication without sufficiently revising it. The explanations of results and conclusions are too sparse and lack depth in analyses and presentation. One is emboldened to say that an enlightened readers or researchers will be sorely disappointed if they look for an erudite material or a sound academic analysis of an important economic issue. The author has not risen to the task undertaken by her.

M. R. Dua

(*Continued from page* 31)

the USSR ever since it was eradicated some 30 years ago.

The involvement of the PHC has been secured through special oneday courses meant to educate the doctors and the para-medical staff on the life cycle of the virus and the transmission of the disease. Special care is taken to equip them with the knowledge about the precautions to be taken to prevent transmission from those already infected

Prof. V. Ramalingaswami, Director General, Indian Council of Medical Research, observed in the course of a lecture recently, "the disease can be and must be eradicated before we know enough about it. In fact, guinea-worm is one disease which, after smallpox, is an ideal candidate for eradication in the country. Prevention, in this case, is the best method to get rid of it." he said.

There are already encouraging reports Tamil Nadu has already eradicated the disease. Gujarat is expected to be free of the disease by next year. The count-down has begun. About 4,050 villages have reported no cases for the last three successive years. The NICD authorities are planning to have an independent evaluation of the programme conducted next year.

Not that there are no problems. Although different ministries and departments have been coordinating admirably, the programmes often get bogged down by bottlenecks; one of the weakest links in the chain has been the frequent breakdown of the water supply system. Data from eight districts collected by the NICD reveals that on any given day, one out of every three water sources could be out of order. Slow as the state machineries are, it takes ten days to three months to attend to a breakdown. Quite often, the states have been found lacking in maintenance facilities. The NICD is trying to have the breakdown in the water sources attended to promptly through their own sources.

But should the state governments let a scourge linger for want of an essential component which they are even otherwise committed to provide to all the problem villages ? "If anything, guinea-worm disease is the single most reason why India must reach clean drinking water to all the problem villages. The sooner this is done, the better," says Prof. Ramalingaswami □

Inland Waterways Authority

An Inland Waterways Authority is proposed to be set up by the Ministry of Shipping and Transport. The proposed Authority will be entrusted with the responsibility of development, maintenance and operation of National Waterways in the country Ten Waterways, namely (i) the Ganga-Bhagirathi-Hooghly river system, (ii) the Brahmaputra, (iii) the Mandevo, the Zuari and the Cumberjua Canal in Goa, (iv) the Mahanadi, (v) the Godavari, (vi) the Narmada, (vii) Sunderbans Area, (viii) the Krishna, (ix) the Tapti and (x) the West Coast Canal in Kerala, have been identified for consideration for being declared as National Waterways.

Already the Allahabad-Haldia stretch of the Ganga-Bhagirathi-Hooghly river has been given the status of a National Waterways by enactment of a Central Legislation. The proposed Authority will also act as a Research and Advisory Agency for shipping and navigation on inland waterways in the country. □

Doubling leather goods production in Seventh Plan !

The Working Group for leather and leather goods industries for the Seventh Five Year Plan has suggested the doubling of leather goods production from Rs. 120 crore to Rs. 240 crore and increasing the present production of footwear of 300 million pairs to 440 million pairs. The emphasis will be on the production of value added items for exports. The Seventh Plan export target has been fixed at Rs. 1000 crore.

The total exports of leather and leather goods which were valued at Rs. 186 crore during 1972-73 have increased to Rs. 584 crore during 1984-85. The share of semi-finished leather to the total exports has come down from 82 per cent in 1972-73 to 12 per cent in 1983-84. There has been corresponding increase in the export of finished leather and leather goods. The Seventh Plan export target of Rs. 1000 crore could be achieved only by setting up modern sophisticated production units with latest technology and high productivity.

It is proposed to set up an institute for footwear technology as an apex body to undertake sector-oriented research. Sporadic and uncoordinated efforts done on research and development by a few institutions are not adequate.

Besides being labour itensive, the most significant part covers the artisans, craftsmen and workers belonging to weaker sections employed in the industry. A balanced development of the industry must ensure that the economic benefits percolate down to the lowest level.

Various measures taken by the Government to encourage the leather industry include common facilities centres set up for leather finishing to assist smaller units. Eight such centres are in operation in different parts of the country assisting more than 400 small scale units. Common facilities services are also provided by small Industries Service Institutes and the National Small Industries Corporation.

In addition, a large number of machinery items for manufacture of leather and leather products have been placed on O.G.L. and import duty reduced to 35 per cent. A number of other concessions like exemption of duty on import of raw hides and skins, wet blue, chrome-tanned leather, crust leather and finished leather from hides are also given by the Government. Also a package of incentives is being provided for increasing export of value added products. □

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Bharat petroleum makes giant strides !

BHARAT PETROLEUM CORPORATION (BPC) has completed the expansion of its refinery in Bombay at a cost of Rs. 139 crore. It will increase its crude distillation capacity from the present 46 lakh tonnes to 6 million tonnes a year.

The scheme also provides additional secondary processing facilities to upgrade low value residues to high value products such as diesel, kerosene, naphtha and LPG. The additional quantity of such high value products will be 7,30,000 tonnes of diesel, 45,000 tonnes of kerosene, 4,44,000 tonnes of naphtha which would provide the necessary feed stock for other industries. LPG would provide clean and efficient domestic fuel to an additional 8 lakh households. Diesel and kerosene would help reduce dependence on imports. These products will effect a foreign exchange saving of up to Rs. 70 crore per annum.

The BPC has now become one of the very few refineries, equipped with a microprocessor based digital process control system. This system provides instantaneous feed back and control of the many processes. Its operational flexibility is considerably increased. At the same time the safety of the units is enhanced.

In the expanded unit, crude processing facilities and the high vacuum unit are designed indigenously. They help maximise conservation of energy and pollution control. About 80 per cent of the total value of items used in the project were manufactured indigenously.

Today, BPC refinery is the only refinery processing Bombay High crude upto 100 per cent of its capacity. Besides generating high value petroleum products, the refinery's expanded programme creates additional indirect employment in various sectors including LPG and other distribution networks. □

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Focus on plan implementation

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Dumping hazards on the week !

NEXT ISSUE

Spotlight on IRDP

Boosting handloom production !

VARIOUS STEPS have been taken by the Government to strengthen the handloom sector in the country. For the protection of the handloom sector a separate legislation entitled "Handlooms (Reservation of Articles for Production) Act, 1985" has already been enacted. Besides, welfare measures for the handloom weavers like Thrift Fund and Workshed-cum-Housing Schemes have been announced. The production of janata cloth in the handloom sector has been augmented by providing additional target of 50 million square metres for the year 1985-86.

In the new Textile Policy announced in June, 1985 greater emphasis has been laid on the modernisation of looms and adequate arrangements for ensuring swift and smooth transfer of technology from the research institutions. Special efforts would also be made to ensure adequate availability of raw materials at reasonable prices to the handloom weavers through the operations of National Handloom Development Corporation.

The National Handloom Development Corporation has already opened yarn depots at Guwahati and Bihar-Sharif. The Corporation is also supplying yarn directly to the State handloom agencies in the States of Kerala, Rajasthan, Madhya Pradesh and the Union Territory of Pondicherry. The Corporation is working out a scheme to supply yarn to handloom weavers at reasonable prices. □

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Dhruva, another milestone in self-reliance

—Rajendra Prabhu

Dhruva, the sixth and the largest research reactor at Bhaba Atomic Research Centre, Bombay, became critical on August 8, 1985. One of the world's largest reactors of its kind, Dhruva was entirely designed by the scientists of BARC. It is a 100 MW reactor which will not generate electricity, but will only help our scientists to build better nuclear power reactors in future. Mr. Prabhu gives an interesting account of how the reacter came into being and what it seeks to achieve.

ALFRED NOBEL, the inventor of dynamite, is known to have died an unhappy man. He saw his wonderful invention being used not in the service of man as he wanted it to be. Dynamite was being used for purposes of war. The power of the atom today replaces dynamite in this respect. It has all the potential to destroy the world twice or thrice over. It has all the power to make this world a better place to live in It is our choice what we make of it

How it will work?

What the atom can do for a better future for us tomorrow, has been demonstrated to us time and again right in our own country. We have nuclear power stations that use a few tonnes of uranium to generate enormous power that would have needed million tonnes of coal. Take the Madras Atomic Power Project at Kalpakkam in Tamil Nadu Its two reactors will together generate heat enough to produce 470 MW of power. As against some 40 tonnes of fuel needed to run these reactors, a coal-fired power station of this magnitude would have required several thousand tonnes of coal to be hauled all the way from Bihar or Andhra over thousand and odd kilometres day after day. From the used uranium in this reactor we can separate plutonium. A mixture of this plutonium and spent uranium could again be used in what is called a fast breeder reactor as a fuel. And that is not the end either. Because this type of breeder reactors would produce more of plutonium than is put in, we have the phenomenon of a power house which generates more fuel than it uses. From there, a third stage could also be seen. In this third stage India's rich deposits of thorium could be used in the fast breeder to produce yet another uranium based fuel for use in the third generation reactor In this way all that we would need for taking care of our future electricity needs would be a few thousand tonnes of uranium and thorium. This would suffice, theoretically at least, for the next 100 years or more.

Sometimes what appear as simple propositions are the most difficult to be put into practice. Learning to generate power from the atom is one such. The temperatures you encounter are very high. The risk to human live and enviornment are also high so that most stringent safety measures are needed. The atom, like many other things in life, is a good slave but a bad master To tame it would require a whole lot of skills in new materials, design, engineering, running of plants, disposal of waste, maintenance and so on. Research reactors are therefore set up to learn the skills and continually update them The first research reactor Cyrus was set up 25 years ago It provided the country's nuclear scientists with the necessary tool for studying the atom and also obtain several byproducts like nuclear isotopes which have numerous uses that we will discuss later

For future expertise

The latest in this series of nuclear research reactors, went critical on August 8, 1985. The scientists of the

habha Atomic Research Centre at Trombay in ombay, where the reactor is situated, rightly named "Dhruva" the lodestar. It is the sixth and the rgest research reactor at BARC. For many years) come, this research reactor would provide us the idance in our peaceful nuclear programme to harss the power of the atom in the the service of man. he scientists of the BARC told me with a lot of ide : "We are excited about it". What is all this citement about ? Because, here is a new research ol for them that will help them build better nuclear wer reactors in future, learn more about how the om behaves when it splits generating heat and radiaon and incidentally provide a whole new range of dioactive isotopes for use in various areas of human nefit. Many of these isotopes like iodine-125 are ported. Now these would be locally made.

Tremendous research value !

hruva is a 100MW reactor. It is one of the world's rgest research reactors entirely designed by the entists of the Bhabha Atomic Research Centre. The rk on it started in 1973. Compared to Cyrus, iruva is two and a half times in size. But the comrison should end there. Dhruva is more versatile an Cyrus. Its high neutron flux which is twice that of rus would enable several studies in neutron action, the way a fissile atom behaves when bombarded by hower of neutrons and so on. Dhruva would also able the BARC scientists to carry out experiments it would give them a greater insight into nuclear physics. This is an insight that they need as the nuclear energy programme proceeds from the standard 235 MW reactor to 500 MW reactors and from there to fast breeder reactors and also as it begins to use new fuels. Dhruva has also yet another facility. That is, it could experiment with different materials meant to go in nuclear reactors. Scientists could, by using these materials within the Dhruva reactor, find out how they behave under conditions of radioactive pressure and heat. This intimate knowledge of behaviour of materials that go into reactor body and equipment is necessary to improve designs, make reactors more efficient and much more safe than they are today. It is necessary to recall here that we, in this country, can be proud of the fact that our scientists and engineers today can design, fabricate the entire range of equipment, instal and run 235 MW reactors, a capacity very few countries in the world have. By developing this capacity the hard way we have released ourselves from any need to surrender to international lobbies and pressure groups which dictate their terms for the supply of the know-how or materials or equipment for nuclear reactors. For this the country is indebted to the vision of Nehru and Bhabha. Dhruva would be yet another big step taken in improving and broadening that self-reliance.

The ultimate benefits

It would necessarily be many years and many steps before we perfect the science and art of coaxing the atom to yield all its secrets for human welfare. But ready there is a body of knowledge and competer which has begun to affect our lives. We have alrea looked at the power scenario and what the atom co do in giving modern day version of "akshyapati of fuel to run the reactors. Nuclear isotopes are slov but surely changing the medical science. Several typ of scanning devices are able to tell more accurately a with greater speed what is wrong with our body a our metabolism. These devices use minute quantity nuclear isotopes which are carefully made to meas in the research reactors like Dhruva. Nuclear isoto are also having increasing application in agricultu They help to select the right mutant for our high yiel ing seeds programmes. They help to give us a bet insight into how plant nutrients work and thereby he us to know what fertiliser to use and when and h much. In post harvest technology, nuclear isotop play an important role. For instance, you have t phenomenon of potato glut every season. It is sim not possible to keep them in the cold storage f months. Nuclear irradiation by preventing the biolo cal decay or transformation of the potato protects t potato harvest and enables the potato farmer to w till he gets a better price. True, all these techniqu have not yet been accepted internationally but slow prejudices and fears about them are giving way facts that are incontrovertible. They will thus beco more widely acceptable. Let us hope in future, t farmer would not have to fear that his grain a vegetable would be destroyed by moisture and worm The atom is thus coming more and more into our da lives in farms, in factories where it will tell how stru tures behave under stress, in medicine by helping tell what is wrong with our system and so on. Behi all this will be the unseen hands and sweat of o nuclear scientists with their new and versatile resear tools like the new reactor called Dhruva. □

(Courtesy : All India Radi

Shifting of industries to improve environment

IT IS THE endeavour of Government to shift many industries/godowns from residential areas of b cities to industrial areas for better environment aspects and in order to give clean atmosphere.

To encourage industries to shift from urban are and as a measure of decongesting the overcrowd cities and for reducing pollution, capital gains arisi from transfer of buildings or lands used for the pu pose of business are exempt from tax if these a used for acquiring lands for constructing buildin for the purpose of business at the new place. From t financial year 1983-84 this exemption has be further extended to capital gains arising from transf of machinery and plant also. □

This implementation game!

P. K. Doraiswamy

Planning is easy but implementation is not so. The author explains that every government project goes through five different stages : initial euphoria, disillusion, panic, search for scapegoats and praise for those who raised objections initially. He suggests the way out of this vicious circle.

"WAR", said Napoleon, "is not difficult. It is the waging of it that is difficult." It is all right to say, in true Bhagavat Gita style, that a sincere effort is a success in itself and that the fruits of one's action lie with the Lord. But one cannot feed people or clothe them with mere sincerity. Every product or service we consume is the result of organised effort, the result of implementation of some plan or project. Similarly planning is not difficult, difficulties start with implementation.

Though implementation is a recognised weak-spot in administration, particularly public administration, the available literature and so called project management concentrates mostly on the application of formal techniques of quantitative monitoring of physical resources such as PERT (Project Evaluation and review Techniques), CPM (Critical Path Method), RAMPS (Resource Allocation and Multi-project Scheduling), SPAR (Scheduling Programme for Allocating Resources), LOB (Line of Balance), PPB (Planning, Programming, Budgeting), etc. It is almost as if people believe that, once a blue-print is prepared, resources required are calculated and allotted, the whole monitoring put on a computer and a contract awarded, the blue-print is bound to transform itself into a three-dimensional reality within a reasonable time. Apart from some reference to metrix, cell-type and link-pin types of organisations, the traditional literature hardly does justice to the complex human dynamics involved in implementation which, in practice, is really something of a 'game' in a psychological sense. A game implies not only an overall frame-work of rules within which it is played but also, within this framework, a certain amount of manoeuvring, rivalry, bargaining and compromising among the players. This article proposes to comment on some of these aspects of the 'implementation game'. In other words, this article examines not project management so much as project behaviour, particularly government projects.

Hidden hand

The first aspect is what may be called the need for an Inspiring Myth about the benefits of large, new projects in a developing country. In an under-developed country not accustomed to taking up new, complicated projects involving technological and economic risks and uncertainties, the initial inertia and aversion to risk-taking can be overcome only by generating a general, non-specific belief on the efficacy of starting new projects. This is usually done by administrators and technologists joining together and making it appear that :

(i) most projects|technologies found in developed countries are easily transferable

(ii) the benefits easily exceed the costs

(iii) the time needed for completion has to be short.

While it is easy to criticise this approach as shoddy at best and dishonest at worst, many scholars of development economics feel that initially such a myth is essential to get things started and that, after gaining sufficient momentum and understanding, such apprai-

sals can always be made more rigorous. This gimmick has been used in a variety of projects right from the days of Sri Arthur Cotton's Godavary Barrage (which, in retrospect, is considered a boon to the area) up to the days of the British-French collaboration on the Concorde (which is now generally accepted as a classic planning disaster). The Invisible Hand of private enterprise apparently has its counterpart in the Hiding Hand of public enterprise !

Populist decisions

The above Inspiring Myth gets re-inforced by the preference of all politicians for new projects over the completion of old, on-going projects. (In addition to the traditional expressions such as site-bound projects and foot-loose projects, a new term in vogue is a "Minister-bound" project.) Democratic Governments do not get as much political mileage out of completing| expediting projects sanctioned by their predecessors as in sanctioning new projects. There may even be a vested political interest in delaying on-going projects to show their choice to be wrong.

While a political government is thus ever eager and totally committed to announce new projects, paradoxically, its commitment to any single project is never total. A government's concern, however genuine, keeps flitting from one new project to another or from one old project to another depending on where the greater crisis is. Many an administrator makes the mistake of naively assuming that merely because a Chief Minister has personally suggested or announced a project, the project would automatically receive adequate and continuous support from all wings of the government. He is somewhat unprepared for the subsequent problems of integration and coordination which sometimes seem to take more of his time than actual project construction.

Lack of clarity

Most governments overestimate their resources and capability (due to ignorance, inexperience or expediency) and are often faced with the problem of rationing out available resources to the various projects under implementation. Given the realities of inflation, the government has to optimise the over-all economic and political consequences of inflation by expediting some projects and deliberately going slow with others. This would create implementation problems for individual project managers all of whom generally try to speed up their respective projects and do not know how their own projects fit into the government's overall scheme of things. Usually, project managers are never kept informed in time of this overall picture and are caught unprepared for making the necessary adjustments.

Governments are notorious for the lack of clarity in their goals. While this criticism makes much managerial sense, politically any government which defines its goals too precisely is a hostage in the hands of the Opposition. In one of the States, a PERT chart was introduced for the first time in a major irrigation project and unfortunately, for various reasons, this project turned out to be one of the most delayed projects in the country. At every session of the Legislature and meetings of various non-officials, there was always a reference to the original PERT chart and comments on the government's inability to adhere to the time-schedule. The Chief Minister, normally a sober and confident person, remarked in sheer exasperation, "We have built so many projects in the past without any PERT chart. Why did you officers have to introduce it now ?". A certain vagueness in the goals is part of the strategy of political survival as it not only prevents the Opposition from pinning you down when shortfalls occur but also gives scope for modifying the goals mid-way through implementation if political imperatives so dictate.

We are all familiar with mid-stream changes in the major parameters of projects like basic production capacity, technology to be used, target groups to be benefited, etc. In addition to all these, no government generally likes to make it totally clear whether a particular project is entirely site-bound or foot-loose lest every region should claim the project. The implementation problems which project administrators face as a consequence can easily be imagined.

We now come to some aspects of the dynamics of actual project implementation

Once implementation starts, government, which hitherto appeared to be a single organisation with a single will, suddenly turns out to be several sub-organisations with different sub-wills The project administrator, important and much sought-after immediately after the announcement of the project, suddenly finds himself hopelessly dependent for implementation on many others over whom he has little direct control. (Apart from his own official colleagues in other departments with whom he is supposed to 'coordinate', this also happens with a contractor who is at his mercy till the contract is awarded and gains the upper hand once the work is started). He realises that

(i) the initial non specific, enthusiastic consensus among various government agencies on the project soon dissolves into specific, often violent, disagreements on details of implementation and the authority of one department vis-a-vis another ;

(ii) each participant agency has a different time and priority orientation towards the project in the context of its other commitments ;

(iii) the success|failure of the project does not have the same, or equally important, consequences for other agencies as it has for the project administrator himself ;

(iv) because of (iii) above, collective action learning never takes place and each failure of coordination only further reinforces the departmental bias of each agency towards the others (e.g. one failure of coordination between two departments, instead of making them realise and avoid this in future, only makes them more hostile to each other).

(v) no one knows what "coordination" means · whether it means bargaining, coercing, over-ruling, saving faces, compromising or achieving consensus, with the result that everyone clamours for coordination—on his own terms !

(vi) in his own interest, "coordinating" with other agencies is necessary as every additional signature on file represents one more hostage against retribution if anything goes wrong;

(vii) in between two major decision points in project implementation, there are diversion points which can cause delay (example : strike by labour, legal disputes with contractors, routine objections from Statutory authorities, etc).

(viii) as long as a very large number of agencies and decision points are involved in implementation, even a minimal or "reasonable" delay at each point would cumulatively add up to a significant delay in implementation. (In fact, it can be worked out mathematically that if there are 70 sequential decision points in a project, minimal|minor|moderate delays represent 1 week|3 weeks| 6 weeks respectively and these 3 types of delays are equally distributed over the 70 decision points, the total delay would still be 233 1|3 weeks or 4 1|2 years ! Similarly, even if the probability of all the concerned agencies agreeing on each decision point is as high as 0.95, the cumulative probability after just 14 decision points becomes less than 0.5, i.e as good as tossing a coin !).

(ix) though all commitments|contracts are neatly tied up on paper, in practice, government can never act quickly enough to "capture" the essence of such commitments|contracts and enforce them on the parties

The above analysis shows the complexity of collective action in implementing any project, particularly those politically controlled. While, in theory, a project organisation is supposed to be a "fighting formation" (to borrow a military expression) and "coordination" is supposed to provide unified leadership, in actual practice implementation consists of assembling diverse programme elements most of whom are largely independent of each other and a lot of energy goes into avoiding responsibility, scrutiny and blame. I[n] other words, the implementation game is predominan[t]ly "defensive" in character. Obviously, there can b[e] no "formula solution" to such a problem nor wi[ll] graphic, quantitative or computerised techniques alo[ne] suffice. Certain non-conventional approaches, oft[en] bordering on manipulation, have been used effectivel[y]. For example, in order to avoid a political controver[sy] (and consequential delay) on the location of a maj[or] project, a foot-loose project may sometimes be pr[e]sented as site-bound or technologically too sophist[i]cated to be explained in detail. Similarly, to force t[he] agencies involved to submit to coordination, the ben[e]ficiaries of a project have been deliberately organise[d] and encouraged to bring political pressure for t[he] early completion of a project. An open, politic[al] commitment to inaugurate a project on a date whic[h] has a great symbolic, emotional significance oft[en] compels bureaucracy to work together more effectivel[y]. Of course, such unorthodox steps for the early com[]pletion of projects have sometimes led to the subs[ti]tution of quantity for quality or a subtle, covert mo[di]fication in the scope of the project There are al[so] cases of incomplete projects having been inaugurat[ed] and completed later by "installing balancing equi[p]ment". To the purist administrator, these may appe[ar] to be cheap, crude or even below-the-belt methods b[ut] in real-world management-these are perhaps r[e]quired for supplementing text-book techniques.

Suggestio[ns]

In addition to the above, some other steps th[at] could be considered to improve implementation ef[fi]ciency are :—

(i) possible implementation problems may [be] considered by the policy-makers themsel[ves] instead of these being considered a hin[d]rance to quick policy-making and being l[eft] to be sorted out by lower levels [of] administration after implementation star[ts]

(ii) wherever possible, the project formulati[ng] agency may be made responsible for i[m]plementation also (example : In irrigati[on] projects, the investigation divisions oft[en] give a wrong soil profile based on wh[ich] designs are prepared only to be drastica[lly] modified during execution by the impleme[nt]ing divisions;

(iii) the number of independent participati[ng] agencies and sequential decision points m[ay] be minimised so that the total cumulati[ve] delay may be minimised;

(iv) a "fixer" could be identified who 'know[s]' 'cares' and 'can'; i e who has the knowled[ge] energy and resources to remove bottlene[cks] when normal coordination fails. (This co[uld] be anyone from a local MLA, a Minist[er's] PA or the Chief Minister himself.)

(Continued on page 1

What lacks in block level planning !

Dr. Ram Krishan

Why the objectives of the planning remain unfulfilled with unemployment, poverty and imbalances continuing unabated? Is it because of lacunae in the planning process? Or is it due to non-involvement of masses, bureaucratic way of planning and the influence of the vested interests to prevent any serious attempt at radical transformation of the poor? The author feels that a sound planning is needed to secure proper implementation of schemes for specific areas and blocks.

THE PLANNING PROCESS thoughtfully initiated in the early years of Independence has done perceptible good in the direction of economic development of the country but it could not be denied that the basic goal of planning still remains distant. This could be attributed to a number of factors like various conceptual gaps in formulating programme proposals and failures in implementation in various spheres of economic and other activities, especially those meant to raise the social-economic level of the weakest sections who form the bulk of our population.

There is no denying the fact that most of the Schemes launched by Government for the benefit of the poor have failed to reach the targeted category of people. The result is, widening of the wedge between the poor and the rich and increase in the number of persons below the poverty line. The green revolution is a striking example of the anomaly wherein the increase achieved in production was cornered by a handful of powerful rural holders having comparatively large holdings.

The desire for involving the masses in the process of planning has also remained largely unfulfilled because of our bureaucratic way of planning and the influence of the vested interests which lay in maintaining the status quo and preventing any serious attempt at radical transformation of the weak and the poor.

In the successive Five-year Plans in the past, the aim of planning has always been to focus on the following main objectives : (1) Reducing or removal of unemployment, (2) A significant rise in the standard of living of the people specially those below the poverty line through increase in per capita income, and (3) Reducing socio-economic imbalances among various areas and people and ensuring distributive justice The idea was to move the society progressively towards equality and social justice.

Even in the Seventh Five-year Plan, the main objectives are almost the same. It would, therefore, be proper to find out as to why the objectives are not being fulfilled and unemployment, poverty and imbalances still continue. In the present article, an attempt has been made to point out and discuss the lacunae in the past planning process so that foundation of sound planning in future be properly laid to ensure fulfilment of the main objectives specially in respect of planning for specific areas and blocks.

Lacunae

There are several lacunae in block level planning. Major ones are : absence of spatial planning, rigid budget pattern, remote and delayed decisions, stress on staff schemes, employment of unsuitable and unwilling staff, non-synchronization of plan objectives with programes, absence of land-use planning neglect of basic problems of the people|areas and of

cottage industries, absence of professional surveys, absence of healthy institutions, state policies not commensurate with peoples' needs and aspirations, lack of proper reviews, unchecked population growth and rampant corruption. Of these, the first one has been described in the first part of this article and the remaining ones in the second part of the article.

Spatial planning

Spatial planning for infrastructural development is essential for a balanced growth of people and areas. In absence of this, the growth processes do not take roots.

Spatial planning, according to the report of the working group on block level planning set up by the Planning Commission (1978) implies systematic efforts to locate facilities (roads, schools, factories, housing, etc.) in relation to human settlements where all people can use them to maximum advantage. If this is not done conscientiously, infrastructural investments of sectoral programmes would be made in haphazard locations and they may not converge in desirable combinations at the most optimal locations. Such convergence can affect large economies in movements of men and materials and better utilisation of facilities. The advantage of such a convergence is that farmers can get all their things done at one location. If locational planning is not intersectorally integrated and not done with social justice in view, there would be unequal growth of areas and viability of projects in many cases would decrease.

Spatial planning is a comprehensive exercise which deals with all spatial manifestations and resultant outcome of all human activities. It is, therefore, concerned with all types of activities of people which are relevant for planning the levels of economic and social activities in a particular region. Spatial planning must therefore: (1) guide the process of social development through a locational blue print, (2) ensure that the objective of distributive justice is realised through an access to consumption and production facilities for all sections specially the weaker sections of society, and (3) it must initiate a process of participatory planning through an integrated Institutional framework reducing progressively the urban-rural dichotomy.

Foremost requirements in spatial planning is to decide upon the lowest unit of viable administration.

The administrative tiers in each State of the country are more or less the same but with different names. Planning for institutions and infrastructure to be created will be different for all levels. For some items like fertilizer factories, steel plants, manufacture of heavy machines and defence equipment, construction of big irrigation dams, inter-State and intracountry works, etc. planning has to be finalised at national level, taking regional needs and suitabilities into consideration. At the State level, overall needs of the State, such as for cement, textiles, sugar, paper, etc. would be the consideration. At the district level, the district needs would get priority and so on. More down below, namely the blocks, Nayaya Panchayats and the villages, it has to be a more specific area as well as people-oriented. For the poor, it is generally the development of last two tiers in which they are most interested, because those would benefit them the most, both individually as well as collectively. As the tiers rise up, their direct interest becomes less and less as the poor in the villages are more interested in raising their income, they need a relevant socio-economic structure close to them.

Locational decision

The activities which would require locational decisions in the rural areas of the counrty are suggested in Annexure 'A'.

The list of activities in this annexure is tentative and will differ from area to area. Systematic planning for deciding upon the locations, would require determining the norms for populations threshold, and distant standards and existing facilities on the basis of which plan would have to be prepared for each area. For spatial planning, a cluster of eight to ten villages should be the lowest unit followed by the block, district, region, State and conutry. It would be in the interest of organised planning if a central village out of the cluster of eight or ten villages (in U.P. it would be Nyaya Panchayat headquarters) is selected, for developing as a Rural Growth Centre, which it would be better to call a Kisan Nagar. The infrastructure needs of this Kisan Nagar have to be finalised on the basis of requirements of the area. Similarly, for the block, district and State levels for having a rural growth centre, a land area of about four to six hectares would be needed. It may have to be acquired or donated by the village. If consolidation of holding operations have not been completed, the required land may be set apart from the village pool. These rural growth centres should also have enough land for housing colonies In these colonies, preference for allotment of plots would be given to only those having kachha houses or no house. Only persons residing in the cluster of eight or ten villages should be allotted land in this colony. The step is being suggested so that rich persons of the area may not get a large number of plots allotted to them. If it is required to allot plots to rich persons of the area, they may be charged a higher price.

Before planning for location of Kisan Nagar, an inventory of all the existing infrastructure|facilities| institutions|services would have to be prepared These then would be mapped and their spatial reach to the village settlement identified. On the basis of realistic norms, thereafter, spatial gaps should then

identified and suitable plan drawn up for execution.

Viability of Kisan Nagar

Each Kisan Nagar should be connected by a road block, tehsil and district headquarters. Buses should y from here to take passengers to the above head-arters in the morning and bring them back in the ening.

Weekly and bi-weekly markets should be organised each Kisan Nagar wherein farmers bring their oduce for sale and go back with their requirements consumable commodities. They could also do their nking on these days. The Kisan Nagar may itself rve as a centralised marketing centre for a cluster villages.

A cattle market should also be organised in each isan Nagar and if it is uneconomical to organise a ttle market in each Kisan Nagar, it may be organis- i for two, three or more Kisan Nagars. he above Kisan Nagars should first be established backward and far off inaccessible areas as well as e districts with big industrially developed towns like anpur, Jaipur, Bhopal, Varanasi with a view to iecking rural exodus to these industrial cities.

Location of Kisan Nagar should not be decided ı political grounds but on actual situation and quirements of the area. As users of facilities, people ıould be consulted about the location, nature and ıality of infrastructural facilities and social services ; they are in the best position to know their require- ıents and their logistic convenience. In consultation ith the people the planner has, however, to fferentiate between vested interests of some people ıd real needs.

As various institutions would belong to different epartments and organisations, it would be advisable ır the Area Development Departments of the State overnments to decide upon the norms for threshold opulation and distance standards through a collective ecision of the concerned departments and rganisations.

It should be better if regional Corporations which 'ork under the Area Development Departments in ach State are made responsible for execution of this cheme and management of Kisan Nagars. Various ıstitutions in the Kisan Nagars would, however, be ın by respective departments or organisations con- erned. Some statutory rules would have to be framed ır continued maintenance and extension of these ownships which would slowly develop into ful- edged towns.

In brief, the spatial planning has to be done in he following stages :

Preparation of existing inventory of facilities| institutions|services in the area and population and village settlements served by them at present.

Selection of viable micro-regions or units for spatial planning. They could be administrative units like Nyaya Panchayat or others based on Geographical considera- tions. Thus, such micro-units will be units in between the block and the villages.

If for spatial planning, boundaries of existing micro- administartive units require changes, it should be done right at the start.

Deciding upon the new supply and service facilities organisations and other institutions needed, keeping in view the existing facilities, resources, population and distance standards and locating them by converg- ing and integrating the various public and private infrastructures at one location.

Developing of micro-area as a viable socio-econo- mic unit utilising integrated multi-sectoral approach with multi-level spatial planning with a view to providing large scale employment within the area itself, to ensuring conservation of resources, equitable distribution of benefits and growth with social justice, to removing poverty through better management and mobilization of local talents, skills and resources and stimulating an organised community effort for chang- ing attitudes and driving out stagnation, lethargy and fatalism from their minds.

Annexure A

A Commercial Infrastructure—supply and service

1. Regulated market or Sub-markets
2. Cold storage
3. Workshop for repair of machines
4. Custom hiring service for mechanised tools
5. Sale depot for fertilisers, pesticides and seeds
6. Television, Radio and Watch repair service
7. Milk collecting and Chilling Centre
8. Veterinary hospital and stockmen Centres
9. A.I. facilities and bull Centres
10. Branch of Land Development Bank and other Banks
11. Warehousing storage services
12. Processing facilities
13. Irrigation services
14. Transport facilities for bringing inputs and taking out farm outputs
15. Cane purchase Centre
16. Shopping Centre
17. Diesel Pump
18. Raw material depot for coal, cement, iron steel, building and scarce materials for supply to rural artisans, indus- trial units besides house building industry in the rural arers
19. Training-cum-production Centre for fruits and vegetable processing and rural craft

20. Horticulture nursery

(B) Social Infrastructure (according to requirement)

(i) *Education*

Primary School
Junior High School
High School
Inter College
Degree College
• Technical Education College/Institute

(ii) *Communications*

Road
Culverts
Bridges, if any
Bus station
Post Office
Telephone & Telegraph

(iii) *Health & Medical*

Public Health Centre
Maternity Centre
Midwife Centre
Safe drinking water
Homoeopathic Dispensary
Ayurvedic Dispensary
Unani Dispensary

(iv) *Housing Colonies*

(v) *Power Lines*

(vi) *Rural Cinema*

(C) Organisations

Economic Organisation

Location of office of village level functionaries
Community Hall
Co-operative Societies/Industrial Societies
Cane Purchase Centre
Bank Branches

Social Organisations

Youth Clubs
Mahila Clubs
Police Chauki

(D) Projects

Productive Key and Supporting Projects as indentified for the area such as

Brick Kiln
Lime Kiln
Spinning Mill
Paddy and Pulse Processing Units
Sugar Mill
Cold Storage
Cottage Industries Units
Rural Markets and Supply Centres for the local trades

(To be continued)

(continued from page 8)

"Never has there been an event with more serious consequences, longer in gestation and less foreseen", said Tocqueville about the French Revolution. How aptly it describes a government project under implementation ! Watching the different government agencies interacting with each other, one is reminded of the words of Hobbes :

> "Bellum omnium contra omnes (war of all against all)".

It is even said that every government project goes through the following stages :

(i) initial euphoria

(ii) disillusion

(iii) panic

(iv) search for scapegoats

(v) praise for those who objected initially.

But it is well to remember that a project does not implement itself and odds in this world are stacked heavily against things happening the way we want. In fact, the patron saint of all the government projects seems to be Murphy, the author of the famous Murphy's Law : "If something can go wrong, it almost certainly will". Project behaviour and implementation dynamics, therefore, deserve a more detailed study by management experts and practising managers, particularly in the public sector

Small sector in national economy

IN EARLY 50's, the small scale sector started modestly with the manufacture of simple consumer goods only but has now made considerable progress in terms of the areas of manufacture and production. The estimated value of production in small scale industries (at 1979-80 prices) during 1983-84, was Rs. 30,415 crore as compared to 27,700 crore during 1982-83, signifying an increase of 9.8 per cent. Employment in this sector also increased to a little over 84 lakh persons in 1983-84 from 79 lakhs in 1982-83 an increase of over 6 per cent

The share of small scale sector in India's total production is very significant at almost 25 per cent. Only 6 per cent of the total production of this sector is exported. Thus its latent potential remains to be exploited.

The Government is keen to help the small and medium industry in its development. New Import and Export Policy announced in April, 1985 contains a number of measures which would assist the development and growth of small and medium industry in the country. □

Do our plans need structural changes?

S. K. Bhattacharyya

The author here calls for the formulation of Five Year Plans on a more realistic basis. He points out that progress in implementation of IRDP and other poverty alleviation measures show that the development has been very slow and like dreams targets remain unfulfilled. He cautions that the next two decades would be a period of trial as provision of finances and fiscal management would be an uphill task.

JAWAHARLAL NEHRU, the chief architect of the plan frame of free India, made a rather paradoxical statement of Indian economic life when he said, India is a rich country inhabited by poor people" In 1951 we had to deal with a population of 361 millions, while we are now required to deal with the population of 684 millions In the modern theory of demographic transition, increase in population is classified into the following three stages

(i) Stable population growth;

(ii) Rapid population growth; and

(iii) Stationary population growth.

While developed countries have reached the third stage after crossing the first two stages, it has not been possible for cost of the underdeveloped countries to cross the second stage. India in whatever name we may describe her (under-developed or developing) is still in the second stage. Her population shows rapid growth as per census statistics upto 1981, but from the following comparative statistics of 1971 of per capita income of four countries, it appears that we are still a poor country

(In terms of Rupees)

1.	USA	36,884
2.	West Germany	25,544
3.	England	17,992
4.	India	992

We have spent a lot of money for the economic development of our teeming millions (which has been the goal of our economic planning). The following statistics of total outlay during the last six plan periods will reveal that we increased our outlay substantially keeping in view the increasing trend of our population growth:

(Total outlay in millions of rupees)

Plan period	(Public Sector)	(Private Sector)
1st Plan (1951-56)	19600	18000
2nd Plan (1956-61)	46000	31000
3rd Plan (1961-66)	63000	41000
Annual Plans (1966-69)	67560	—
Fourth Plan (1969-74)	167740	89800
Fifth Plan (1974-79)	372500	161610
Sixth Plan (1980-85)	693800	468600

But it cannot be said that the above outlays have been result-oriented. Food, clothing and housing are the three basic needs of our people. It is true that there has been no famine in recent years. It is also true that we do not come across naked people nowa-days. But is it not equally true that mal-nutrition

is rampant and thousands die every year in winter due to lack of warm clothings ? As regards housings a survey made by Dr. S. L. Hendre, 30 per cent i.e., 270 million Indians are homeless. Is this not a deplorable state of affairs after three decades of planning ? We wanted to reduce the number of our countrymen below the poverty-line as per the following statistics. It is however, revealed that no significant progress has been achieved to the extent contemplated :

People below poverty line

	(In Millions) 1979-80	1984-85
People below the Poverty line in rural areas.	259.56 (50%)	166.02 (30%)
People below the Poverty line in urban areas	57.28 (40%)	49.14 (30%)

And what is this poverty line ? In 1977 the team experts appointed by our Planning Commission defined this line as "the midpoint of the per capita monthly expenditure of people having a daily calorie intake of 2400 per person in rural areas and 2100 in urban areas. In terms of 1979-80 prices, these midpoints are Rs. 76 and Rs. 88 respectively. Even we are able to bring down to such people to 30 per cent after over three decades of planning it would be no marvellous achievement because clothing and housing have not been properly accounted for in the above compilation of expenditure.

It appears that there are some defects in our plan frame and restructuring is necessary. In the report published by the World Bank in 1972 India's place in the developing countries is as low as 22nd. Our ex-Prime Minister admitted this deplorable state affairs as under— "To plan when population growth is unchecked is like building house where the ground is constantly flooded" Is the flood of population growth in India uncontrollable ? It is really a serious issue, specially when we are having nearly 40 per cent of our people below the poverty line in whose case birth rate is exceptionally high.

Future economic development

We started our first plan in 1951. Opinions differ about the nature of economic development attempted through our previous plans. One opinion is, by now we are no longer an under-developed economy, notwithstanding our request for aid from I.M.F. and World Bank and that we are a developing economy. Prof. Nurkse, who studied under-developed economies in details is, however, hopeful about the transformation of an underdeveloped economy to a developing economy. He has nicely portrayed the features of a developing economy as under ·

"Such an economy is characterised by increase in capital resources, improvement in the efficiency of labour, better organisation of production in all spheres, development of means of transport and communications, growth of banks and other financial institutions, urbanisation and a rise in the level of living, improvement in the standards of education and expectation of life, greater leisure and more recreational facilities and the widening of the mental horizon of the people. In short, economic development must break the poverty barrier or the vicious circle and bring into being a self-generating economy so that economic growth becomes self-sustained". If we labour hard and with foresight, would it not be possible to fulfil all the above conditions most of which will be fulfilled within the next decade and a half ? If by AD 2000 we repay all our loans and are able to restore confidence in the mind of our people below the poverty line, we would be able to usher in a new era in which we may even find ourselves in a 'developed' condition instead of a "developing" one

Doles, subsidies, no solution

The other view is, the picture is not so rosy. The progress in the implementation of our IRDP and other anti-poverty measures during the Sixth Plan has not been satisfactory so far. Dr Bhabatosh Datta, one of the most eminent economists of our country while reviewing our performance in respect of the sixth and previous five plans commented that the pace of development has been slow and we have not been able to reach our targets. Even our Planning Commission, the official body for the framing and implementation of our plans, have given a stricture on the extremely poor performance in this direction. The socio-economic milieu in the slums of our towns is no better than in our villages. More doles and subsidies would be no effective solutions of the problem. The acid test of a 'developed' economy is that it is of the self-generating type. We are contemplating an employment-oriented Seventh plan. We aimed at 8 per cent industrial growth rate for our 6th plan, but our performance could not exceed even 5 per cent so far In the past we could not prepare our plans on realistic basis It is imperative that our future plans are framed on more realistic basis and once we frame our plans, we have to labour hard to reach the targets by having regular reviews at the levels of States and the Centre. Dr. Nancy Berdsall of the World Bank, while addressing a seminar on the World Development Report 1984, has recently commented that India's population would increase substantially in absolute numbers. It is better that we pay heed to this note of warning.

Curbing population growth

Our Ford Foundation economists who made a detailed survey of our economic planning opined that soon after the year AD 2000 a second India will emerge because of India's population growth rate and unless the present strategy of planning is changed, the

pected massive increase in population which would ·ell to 100 crores would pave the way to disaster. ·cial justice is the crying need and it would be neces ıry to eliminate unemployment and poverty from ε life of our teeming millions below the poverty ıe. 'Prosperity for all' should be the slogan. By suring proper redistribution of income in favour the poor according to a properly phased programme it may be possible to have favourable effects of :reased consumption on the part of those below the verty line to have an overall increase in production, savings and investment.

Our expenditure on family planning has been in- :asing steadily since 1952. While family planning, using contraceptive pills on a larger scale, will ve to be continued during the next three decades, :re is considerable force in the argument advanced some economists that economic development for downtrodden masses is the best contraceptive pill. r bringing about this economic development, it may :n be necessary to change the present pattern of our xed economy. The state may have to acquire the nership of all important sectors of production and roduce more stringent measures for improving the ıciency of public sector enterprises.

Would it not be proper also to re-examine the administration of our Planning Commission, which was ablished 35 years ago? Should we make our ınning Commission an autonomous body or tighten central control? The study team of the Administive Reforms Commission set up sometime back ·aded forcefully for the involvement of our States setting out targets and fixation of monitoring cells regional and sub-regional levels in the states. Sar- ·ia Commission have recently opined that if all ntral Cabinet Ministers are to be included in the ınning Commission, it is necessary that an equal mber of State Ministers should also be co-opted, :ause the States are responsible for an equal proporn of our plan outlays. But if our Planning Com- ısion is reconstituted in this fashion, will it not be unwieldy body, incapable of taking quick deci- ns? Is it not enough that the Chief Ministers of tes are associated with decision-making, leaving it them to ensure implementation at their Cabinet :ls? A rigid system of annual reviews and carry wards from year to year during the five-year period y possibly be a workable solution of the Centre . State controversy.

Funding the plans !

From data available, it appears that provision for ıds for the Seventh Plan would be a headache for : Planning Commision. A huge amount of Rupees rty Thousand Crore was shown as deficit in the ginal planning forecast papers, which has recently :n brought down to ten thousand crore in the revised draft plan. According to the Planning Commission, it will not be difficult to have profit to the tune of Rupees thirty three crore from the State-owned undertakings in the public sector out of which it will be possible to cover the gap of Rupees Twenty Thousand Crore. In the original planning forecast papers, this profit was estimated at the much reduced figure of thirty thousand crore. As regards savings, our Planning Commission have framed their estimates on the increased rate of 26 per cent during the Seventh Plan period. According to them, this increased rate will materialize as a result of additional contributions to savings from our countrymen below the poverty line, who will rise above the line due to the implementation of our plan targets in this regard. Thirdly, the members of the Planning Commission are counting much on indirect taxes which generally provide 80 per cent of the total revenue and are of opinion that earnings from indirect taxes anticipated will facilitate provisions of funds use to the operation of the aforesaid three factors is not, however, shared by economists. According to the latter, provision of adequate funds for the Seventh Plan would be a Herculean job, because prospects of foreign aids on a massive scale are rather bleak and the anticipated profit from the State-owned enterprises may not materialise, unless these enterprises are radically modernised and their productivity is enhanced by ensuring much more efficient management than what are having at present. The apprehension is, the deficit gap would be covered through deficit finance, which will have inflationary effect of a severe type jeopardising the interests of the common man. The shape of things to come during the next plan period is, therefore, uncertain and we cannot visualise a rosy picture of our economy in the near future. The two decades would be a period of trial during which our planners have to be extracautious about the ways and means position of our next five year plans. The beginning of the Twenty-first Century may possibly be the take-off stage of our economic life which will make our plan self-generating. To ensure that we reach this take-off stage in due time, financial provision would be an uphill task during our 7th. 8th and 9th plan periods. While tapping different sources, we should try, to avoid inflationary situations which are detrimental to the interests of our teeming millions. Then again, with regard to targets, physical output planning may be introduced simultaneously with monetary planning. Secondly, the new 20-point programme or similar other programmes of other parties which are now being used as political blue prints may be converted into planning documents with five-year physical targets. Last but not the least important would be debt-servicing planning with repayment and re-cycling of loans from IMF and foreign countries and involvement of the whole nation in raising funds for this purpose should be ensured by the planning authorities. ❑

Indian agriculture needs toning up !

Mohd. Talha

Our country has gained tremendous success in achieving self-sufficiency in foodgrains. Against this the growth of population continues to be still faster. The author feels that agricultural output can be further increased by bringing more area under cultivation, by improving productivity in terms of yield per-hectare and by extending irrigation facilities in the parched lands.

AGRICULTURE OCCUPIES a predominant position in the development process of Indian economy Considering the importance of the same, Government has given priority to this sector in the development strategy. As a result, the Seventh Five Year Plan gives greater emphasis for accelerating the pace and development, taking steps to increase growth of agricultural production, to remove regional and cropping imbalances, to evolve of new varieties of seeds, to increase consumption of fertilisers, to expand irrigation facilities, to extend the supply of institutional credit, price support to farmers and so on These measures, no doubt do have a favourable impact on the progress of agriculture and the country could be able to achieve self-sufficiency in food. Although there has been a significant improvement in the agricultural productivity and the yield per hectare has gone up, agriculture will continue to play an important role in the years to come.

In India, nearly seventy per cent of the total population depend upon agriculture for livelihood. There is no doubt that the country has recorded considerable progress in agriculture sector since the beginning of planned era. But the progress is not up to the mark. Table No. 1 shows the trends in foodgrains production in India.

Table No 1
Trends in Foodgrains Production in India between 1950-51 to 1983-84

Year	Area (million hectare)	Production (million tonnes)	Yield per hectare (Kgs hectare)
1950-51	97 32	55 05	566
1960-61	115 58	82 02	710
1970-71	124 32	108 42	872
1980-81	126 67	129 59	1,023
1982-83	123 32	128 35	1,041
1983-84	N A.	150 60	N A
% inc./dec over 1950-51	26.7	173 5	79

Source — State Bank of India Monthly Review, May 1984, p-222
N A —Not Available

Data given in Table 1 reveals that from 1950-51 to 1982-83, total output of foodgrains increased at the rate of 2 7 per cent per annum and this was largely due to rise in the productivity per hectare which went up by 1.9 per cent per annum. But on the other side total area under foodgrains showed a marginal increase of only 0 7 per cent per annum. Foodgrains constitute nearly 70 per cent of the total grossed cropped area in the country, though less than 30 per cent of the area under foodgrains is irrigated

Kharif season (June—October) accounts for three-fifth of the foodgrains production and rabi season (October—May) constitutes the remaining two-fifth. Over 54 per cent of the value of agricultural output is contributed by foodgrains. Fertiliser consumption has also gone up from 1|2 kg. per hectare to 44.9 kgs. per hectare. Similarly, the acreage covered under high-yielding varieties of seeds accounts for 53 per cent of the total acreage under cereals. Total foodgrains production rose from 55 million tonnes in 1950-51 to 151.5 million tonnes in 1983-84, and was to be around 148.5-150.5 million tonnes in 1984-85. But the progress made on the agricultural front does not leave room for complacency.

Looking to the performance of the agricultural sector from a long-term angle, it is seen that the rate of growth of agricultural production has been falling in recent years. Similarly, the rate of growth of acreage under cultivation decreased from 1.5 per cent per annum between 1949-50 and 1964-65 to 0.4 per cent per annum between 1967-68 and 1983-84. In 1950-51 the rate of growth of agricultural production was 3.3 per cent and the same came down to 2.3 per cent in the mid-sixties.

With the application of the new technology in the form of improved varieties of seeds, increased use of fertilisers and other modern inputs, the rate of growth of foodgrains production potential went up, and as a result, the rate of growth reached to a level of 2.7 per cent in 1968-69. Since then it has again shown a gradual deceleration to 2.0 per cent by 1982-83. The annual increase in foodgrains production potential is below the growth rate of population (2.2 per cent per annum) during this period. Per capita foodgrains production appears to have been more or less stagnant in last few years.

It is matter of great concern that the annual rate of growth in agricultural production stood at 2.6 per cent which is slightly above the rate of growth of population at 2.2 per cent and one bad monsoon could upset the precarious balance. For this state of affairs, many causes are there. Firstly, institutional shortcomings, secondly, technical drawbacks and human factors etc. Thirdly, non-availability of good quality of seeds, manures, tools, etc. with which farmers undertake agricultural operations Fourthly, regional as well as crop-wise imbalances in agricultural production are still persisting in the country. This can be seen from the data that the rise in foodgrains output from 1979-80 to 1983-84 was 41.8 million tonnes Of this increase, over two-thirds came from the major producing States, namely, Uttar Pradesh, Punjab, Andhra Pradesh, Haryana. Maharashtra and Madhya Pradesh. Added to this nearly 9 per cent of total foodgrains is produced by Punjab alone, the share of which in the total population of the country comes to 2.4 per cent. This explains the large marketable surplus of foodgrains which Punjab has been contributing.

Yield per hectare in the traditional rice cultivating regions has lagged far behind and requires to be stepped up. Rice output in the Eastern States such as Orissa, Bihar and West Bengal accounted for 10.9 million tonnes in 1982-83, i.e., 23.5 per cent of the country's total rice output and 35.3 per cent of the total acreage under rice cultivation in the country.

Similarly, production also needs to be increased in the traditional rice-growing North-Eastern regions, which constitutes 8.2 per cent of total rice acreage and nearly 7 per cent of total rice production in the country. As compared to this, non-traditional rice-growing States namely, Punjab, Haryana, Uttar Pradesh, and Rajasthan accounted for nearly 24 per cent of total rice production and more than 18 per cent of total area under rice cultivation. Even in the case of wheat there has been wide regional desparities in productivity. In Punjab it is 3,007 kgs. In Haryana it is 2,526 kgs. Hence special attention need to be paid for increasing productivity in other wheat-growing States, particularly Madhya Pradesh (1,092 kgs.), Bihar (1,343 kgs.), Uttar Pradesh (1,860 kgs.) and Rajasthan (1,830 kgs.).

Cropping imbalance

Indian agricultural sector is also facing the problem of imbalances in the cropping pattern which can be observed from the fact that the share of wheat and rice in total foodgrains output went up from 53 per cent in 1950-51 to more than 69 per cent in 1983-84, while the share of coarse grains and pulses declined from 30.7 per cent in 1950-51 to 18.1 per cent and 8.3 per cent in 1983-84 respectively. Similarly, per capita availability of vegetable oil is nearly 6 kgs. per year, as compared to the world average of 13 kgs. a year. India will have to make efforts to double the production of oilseeds from the present level of about 13 million tonnes to 26 million tonnes. Therefore, oilseeds production will have to go up nearly 6 per cent per year as against the current annual growth rate of less than 2 per cent. Another instance of cropping imbalance is that of sugarcane, which has been showing wide cyclical fluctuations in the output, causing corresponding variations in the output and price of sugar and other sweetening agents. After two successive years of bumper sugar production at 84.3 lakh tonnes in 1981-82 and 82.3 lakh tonnes in 1982-83, sugar production in the country fell to 58.9 lakh tonnes in 1983-84 and is likely to be about 60 lakh tonnes in 1984-85.

Hence to achieve a balanced approach in regard to the cropping pattern, it is essential that an overall integrated price policy for all agricultural commodities should be evolved as an incentive to farmers. Though some short-term fluctuations will not cause

very wide movements in the output of various crops. Therefore, not only technological breakthrough is necessary to increase the yield of pulses, oilseeds and coarse grains, but there is also an urgent need to introduce an integrated price policy for agricultural commodities. In the absence of crop planning in the country, only such a policy will help to eliminate stagnation as also large fluctuations in the output of various agricultural commodities.

Fixing procurement prices

In order to increase foodgrains output, it is essential to ensure that prices should serve as an incentive for increasing production and procurement so that farmers could get reasonable returns But in these years it appears that the price incentive has not recorded much success in increasing procurement and building up food stocks As a result the Government procurement operations cover only about one-seventh of the total rice, one-fifth of total wheat and only fraction of one per cent of coarse grains produced in the country. In India Agricultural Prices Commission (APC), after taking into consideration the cost of cultivation, has recommended the procurement prices. Table No. 2 indicates the trends in procurement prices of paddy, wheat and coarse grains between 1971-72 and 1983-84.

Table No 2

Trends in Procurement Prices of Paddy. Wheat and Coarse grains between 1971-72 and 1983-84

(Rs. per quintal)

Year	Paddy	Wheat	Coarse Grains
1971-72	58	76	55
1972-73	58	76	69
1973-74	70	82	72
1974-75	74	105	74
1975-76	74	105	74
1976-77	74	105	74
1977-78	77	110	74
1978-79	85	112 5	85
1979-80	95	115	95
1980-81	105	117	105
1981-82	115	130	116
1982-83	122	142	118
1983-84	132	151	124
% inc./dec over 1971-72	127 5	98 6	125 4

Source : As Table No 1

From the Table No 2 it can be seen that the procurement prices of paddy has increased from Rs. 58 per quintal in 1971-72 to Rs. 132 per quintal in 1983-84, indicating an over all rise of nearly 127.5 per cent. Similarly the procurement prices of wheat went up from Rs 76 per quintal in 1971-72 to Rs. 151 per quintal in 1983-84, showing an overall rise of nearly 98.6 per cent. Likewise, the procurement prices of coarse grains went up from Rs. 55 per quintal in 1971-72 to Rs. 124 per quintal in 1983-84, i e an overall increase of nearly 125.4 per cent

Till 1977-78, procurement prices showed marginal change and were often not adequate to meet the cost of production. But thereafter, the Government increased procurement prices for foodgrains to offset, to some extent, the increase in input prices and to ensure a reasonable return to the cultivators. From 1977-78 tc 1983-84, procurement prices of paddy was increased by 71.4 per cent to Rs. 151 per quintal, that of wheat by 37.3 per cent to Rs. 151 per quintal and that of coarse grains by 67.6 per cent to Rs. 124 per quintal. For 1984-85, the procurement prices of wheat was raised by Re. 1 to Rs. 152 per quintal and the procurement price of common varieties of paddy was raised by Rs. 5 per quintal to Rs. 137 per quintal.

In providing a reasonable return to cultivators the policy does not appear to have achieved much success. For instance a comparison of procurement prices fixed with the available estimates of cost of production shows that often the procurement price was not adequate to cover the full cost of production though the gap has been considerably narrowed down According to available data the cost of production shows that as against the procurement price of Rs. 77 per quintal in 1977-78, the per quintal cost of output of paddy was higher in the major paddy-growing States namely, Andhra Pradesh, Bihar, Haryana, Tamil Nadu and Uttar Pradesh. Though the procurement price was raised to Rs. 105 per quintal in 1980-81, it was lower than the cost of production per quintal in Bihar and just about covered the cost in Andhra Pradesh.

Irrigation

Irrigation development in years to come will have to be based on quick completion of on-going schemes such as utilisation of potential and better management, unfinished irrigation projects, medium and even minor, which are in an advanced stage of completion and are capable of yielding full or partial benefits in near future. New schemes should be restricted to medium irrigation projects in drought-prone areas and in tribal and backward areas, and to minor irrigation schemes. These should be funded adequately in years to come so as to yield benefits either within the Seventh Plan or in the early years of next plan period.

Banking facilities

In years to come it is stipulated that direct finance to agriculture should account for 15 per cent of the total bank credit by March, 1985 and 16 per cent by March, 1987.

According to the Annual Report of the Finance Ministry, Government of India for 1983-84, an overall target of 16 per cent of the total credit was set for banks. Since 1981, the banks had already crossed the target and touched a level of 17 per cent. Therefore, the new target has been exclusively set for

agriculture instead of for agriculture and allied activities.

There are various financial requirements and banking facilities in the development of agriculture. Some financial requirements and banking facilities are as follows :

(i) Introduction of the lead banks schemes to provide banking infrastructure in the rural and semi-urban areas and various forums to tackle the problems of flow of credit to agriculture.

(ii) Appointment of various working groups and study groups simplifying the lending procedure and introducing changes into the system and methods of financing, formulation of bank credit schemes.

(iii) Introduction of special projects and programmes namely, SFDA, MFAL, DPAP, CAD tribal sub-plan, hill areas development programme, desert development programme, special poultry production programme, intensive cattle development programme, small fishermen's development programme, IRDP, special component plan and the like under which the Government provided organisation staff and subsidy so as to help beneficiaries and banks to participate in the process of development. An effective role be assigned to credit in development and measures should be taken to link various credit schemes efficiently. In this process ARDC| NABARD has needed assistance for improving quantitatively.

While the above performance can indeed be considered modest, one has to endeavour to probe in detail to find out the reasons and compelling factors under which the commercial banks have been working the task of lending in rural areas. This is essential in order to appreciate that in future all-out efforts and policy will have to be evolved to improve the capabilities of banking system to increase the credit absorption capacity in rural areas where productivity, production and profitability of agriculture enterprise could be stepped up by deploying money to bring science and technology to the doors of the farmers. It is against this background that one has to appreciate the present challenges and future tasks.

Raising agricultural production

From the foregoing paras it has been brought out that agricultural output can be increased by increasing area under cultivation by increasing productivity in terms of yield per hectare and by extending more irrigation facilities. At present, there is nearly 10 million hectares of fallow land over and above the current fallows which stand at about 15 million hectares which is a potential source for raising agricultural production. Out of the total area of nearly 329 million hectares in the country, net cultivated area comes to 143 million hectares and gross cultivated area is about 175 million hectares. However, since the scope for expanding area under cultivation is limited, further increase in agricultural production should come from enhanced yield per hectare as well as from the multiple cropping. Similarly, there is plenty of scope for increasing yields per hectare in respect of major crops in the country which are far below yield levels obtained in other producing countries of the world.

There is further scope for raising productivity of irrigated lands. According to the information supplied by the Planning Commission irrigated lands should yield at least 4-5 tonnes of grains per hectare as compared to the existing yield which is hardly 1.7 tonnes on an average. Hence the yield per hectare of irrigated lands needs to be increased by ensuring timely availability of agricultural inputs namely, fertilisers, irrigation and high-yielding varieties of seeds. For this operation, according to the Planning Commision, Rs. 800 crores are required. As against the total irrigation potential of 65.6 million hectares created till the end of June 1984, actual utilisation comes to 60.5 million hectares. This means the irrigation potential of about 5 1 million hectares is not being utilised.

For increasing yield per hectare, it is also essential to promote optimum use of fertiliser. In our country there has been wide variation in the use of fertilisers among regions to regions, seasons to seasons, crops to crops. To day the India's average stands at 44.9 kgs. per hectare. The figures for the consumption of fertilisers per unit of gross cropped area ranging from 2 kgs. per hectare in Nagaland to 149.3 kgs. of Punjab and 231.4 kgs. in Pondicherry.

Increasing use of high-yielding varieties (HYV) of seeds is another aspect to be seen in raising productivity. To day, most of the HYV coverage confines to wheat and rice. In 1983-84, nearly 76 per cent of the 24.4 million hectares of crop area under wheat was covered by HYV's, in the case of rice it came to 54 per cent of the crop area of 41 million hectares. But for coarse cereals, HYV coverage stood at 29 per cent. Added to this in the case of rice and wheat, the use of HYV seeds is concentrated in Punjab, Haryana, Uttar Pradesh and Andhra Pradesh.

Prospects for agriculture

According to the latest Economic Survey, agricultural sector's performance will improve if the economy is to grow at about 5 per cent per year in years to come. Total agricultural production may have to grow at a higher rate as compared to the underlying trend rate of growth attained in the past years. To achieve this objective, it is vital that substantial investment should be put in land development, development of fallow land, development of irrigation potential and better utilisation of potential already created and increased production of quality seeds, pulses and oilseeds. In order to increase agricultural production, full utilisation of existing irrigation potential has been rightly emphasised.

Integrated agricultural development

D.K. Pahalwan and R. S. Tripathi

In another fifty years the population of India may double itself and require 277 million tonnes of food. It is not too early to start improving the management of agro-resources and integrate the agricultural planning, say the authors.

INDIA COVERS ABOUT 328 million hectares of land area. Its agro-climatic conditions favour raising of more than two crops in a year. The variation in agro-climatic factors helps in obtaining a well diversified agricultural production.

In view of fast growing population, food grains has had the highest priority even since we attained independence. It would continue to be our main concern in years to come. Planning Commission estimated that in 50 years from now, we may have a population of about 1375 million, we will then need to produce 277 million tonnes of foodgrain to meet the per capita requirement of 225 kg per year.

Much attention has already been paid for providing the agro-resources like fertilisers, irrigation water, improved seeds, credit, market, improved technology and extension services to the lower levels of their users. However, still there is vast scope for mobilization of these needed resources in the country. Effort has been made here to pin-point the future agro-resource management, and integrated planning for agricultural development.

High productivity of small farms

The agrarian structure of our rural economy is such that small and marginal farmers constitute nearly 73 per cent of the total farmers although they cultivate only about 23 per cent of the total cultivated area. Their earning from farming alone is small, due to low size of holding and uncertain production. However, in spite of the use of low inputs, the production potential per unit area is comparatively more under the small and marginal farms as compared to big farms. On the other hand, medium and big farmers do not manage their farms well thus the productivity of such farms remains below their potential. Hence, there is an urgent need to provide the inputs to the small and marginal farmers and awareness of role of farm management as well as business concept among the big farmers.

During last decades, the major objective of agricultural research and development was to achieve self-sufficiency in food. During 80's, the goal would not only be to further improve productivity and stabilized production but also to generate rural employment Indian agriculture could be made more profitable by reducing the cost of production through more effective use of material inputs and by keeping a better balance between monetary and non-monetary inputs.

Improving the agriculture

The imbalance in the relative growth of different crops was observed, particularly after the 'green revolution'. The most urgent requirement today is to accelerate the growth in production of pulses and oilseed crops. Poor plant population, inadequate plant protection, cultivation in marginal and submarginal areas are some of the factors which reduce the yield of these crops Special attention will have to be paid for strengthening research on these crops to improve their production and nutritive values It is also required to evolve diversified cropping systems in heavy and well distributed rainfall areas instead of the mainly monocropping system with paddy that exists at present.

Statewise proper cropping patterns should be developed according to the soil, climate availability of irrigation water and other agro-resources. Further, the cropping plans for different sizes of holdings be based on cost, return and risk. The farming systems should

be designed in such a way that crops suffer less due to drought and|or flood conditions. The availability of inputs like fertilizers, pesticides, seeds of high-yielding varieties|hybrids etc. has to be insured at right time and also at reasonable prices.

Better availability of manure

Maximisation of biomass production and re-cycling of organic-wastes would be some of the objectives of our future agricultural planning. It is estimated that about 1000 million tonnes of organic wastes in the form of crop-residues and another 300 to 400 million tonnes of cattle dung and organic droppings are available annually in the country These materials contain approximately 6 million tonnes of nitrogen, 2.5 million tonnes of phosphorus and 4.5 million tonnes of potassium. Even if a significant portion of these essential nutrients are efficiently re-cycled, not only our yield but also the land would improve Hence, emphasis on organic-forming should be given for improving the soil productivity.

Social forestry with planting of quick growing plants for fuel and timber is one of the solution of our major rural fuel problem Installation of biogas plants in rural areas may be helpful in supplying energy for cooking and running of farm pumps. It also supplies good quality of farm yard manure. Hence sufficient incentives in the form of subsidies along with wide publicity for the use of 'gobar gas plant' would be helpful in solving our rural energy problems. Efficient use of solar and wind energy in agriculture and provision of good supply of electricity and fuel particularly diesel in crop growing season will further help in improving our future food production.

In the country's sixth five year plan, it has been postulated that fertilizer consumption must grow at a certain minimum rate to sustain the agricultural production in years to come The estimates of total consumption of nitrogen, phosphorus and potassium for the year of 1989-90 is about 11.83 million tonnes. Even to sustain this growth it will be necessary for the government, industries, extension and promotion agencies to intensify their efforts and provide a good marketing system to its real users. Moreover, in future, there should not be any more sharp increase in prices of fertilizers.

On the other hand, for increasing the fertilizer use efficiency proper agronimical practices should be adopted inspite of the several constraints. The practices like green manuring, legume intercropping and legume in multiple cropping systems will be also helpful in decreasing the inorganic nitrogen fertilizer demand of a farm. Possibilities of use of industrial wastes and by products as a manures and fertilizers should be tested. This will not only helpful to meet the future nitrogen demand but also check the industrial pollution.

Integrated strategy

Potential means of increasing agricultural production [illegible] rainfed areas is through collection and conservation of available water resources and by achieving a high efficiency of its utilization. An integrated strategy for utilization of ground and surface water resources and harvesting of rainwater in agro-ecological areas will be helpful in transforming our agricultural and rural economy.

Maximum utilization of irrigation facilities

Studies all over India had revealed that under irrigated conditions, the average yield of crops is comparatively higher and more stable than in the unirrigated or rainfed areas. Hence, there is an urgent need to increase the area under assured irrigation water supply. As per the report of National Commission of Agriculture, the ultimate irrigation potential in the country is estimated at 113 million hectares (2025 A.D.) Of this, about 58.8 million hectares by major and medium irrigation projects and 54.5 million hectares by minor irrigation projects. This will be equal to about 52 per cent of the gross sown area (210 million hectares).

The irrigation potential that has been created in the country when the sixth five year plan started was 56.6 million hectares which is about one third of our cropped area. In the sixth five year plan, it was proposed to create an additional irrigation potential of 5.7 million hectares from major and medium irrigation projects and 8.0 million hectares from minor irrigation projects. On the other hand, it was observed that the gap between utilizer and created irrigation potential is increasing with the increase in the irrigation potential. Hence, for controlling and|or minimising the water loss in conveying, a detailed study of the system becomes necessary to make the each project efficient and productive. Importance of lining of canals and proper scheduling of irrigation for different crops should be made available to the farmers.

Inefficient application of water can be minimised. Work on the command area development and popularization of crop-soil-water management practices may be encouraged for increasing the productivity of crops. Besides this, our irrigation policies should envisage (a) maximum production per unit area through multiple cropping under assured irrigation water supply (b) maximum production per unit of water in region of medium and low rain-fall and (c) stabilization of agricultural output in drought areas. In addition to this, the linkage among the irrigation and electricity departments should be strengthened for potential use of water for productivity purposes. It has been noticed at present that this linkage is rather weak or some time non-existent among these two sister departments.

Need for mechanisation

With the development of high yielding photoinsensitive, short to medium duration varieties of cereals, pulses and oilseeds and efficient agro-techniques under adequate irrigation facilities the possibilities of adopting relay and multiple cropping for maximising crop production have increased. However, the great limiting factor in adopting the intensive cropping pattern is the timely availability of sufficient labour to complete the important pre-and post-harvest cultural operations such as preparation of fields, sowing, weeding, harvesting and threshing etc. These have a direct impact on yield. Selective mechanisation or selective use of farm tools and machines not only helps in increasing the agricultural output by timely completion of field work but also would generate more employment. It was estimated that increased agricultural activities due to adoptation of improved farming technology with better water management generate, on an average about 40 man days of employment per hectare. Hence, the question that mechanisation of agriculture may affect the employment of landless farm workers does not hold valid.

Better means of communication

The marketing opportunities will have to be carefully studied and appropriate advice and facilities should be given to farmers at right time so that their efforts are adequately rewarded. Individual group or cooperative storages should be encouraged so that farmers can keep their produce to avoid middle-men interactions. Further, improvement in the basic marketing infrastructure needs considerable attention by the planners and administrators so that proper supply of input-output can be maintained in the markets. The importance of transportation may be realised in many ways. It helps in reducing the cost of production by lowering the cost of transport of inputs from the market to the farm and outputs from the farm to the market. Thus, for the smooth development of agriculture in India there is an urgent need to link the villages with the main cities of the locality and country as a whole by constructing roads, rails and water-transport systems specially in backward and neglected regions of the country.

Integrated weeds, pests and disease control measures along with increase in the production and coverage of herbicides and pesticides will be helpful in controlling weeds, pests and diseases. Necessary emphasis should also be laid on strengthening research on fruits, fodders, vegetables and horticultural crops. Designing of proper coastal agriculture-cum-mariculture system of farming not only helps in improving the diets and malnutritional problems but also checks the coastal erosion.

Developing mariculture

The territorial water of India extends to a distance of 12 nautical miles. Hence, utilization of about 12 million hectares of sea area for harvesting fishes from sea has to be potentially exploited. Research on aquaculture should also get higher priority to develop relevant technology for production, collection, processing and marketing of both inland and marine fisheries.

Animal population figures indicate that India is having largest animal population. It includes 178 million cattles and 58 million buffaloes. Most of the milk is produced by buffaloes though milch cows (22 million) outnumber milch buffaloes (15 million). However, because of their low productivity, milk and milk products are not even sufficient to meet the per capita requirement of the people. Secondly, the marketing infrastructures of the animal products are practically non-existent in the rural areas and thereby the producers are not getting proper remuneration. Special attention should be paid to popularize the animal husbandry and poultry production in dry and hilly areas under mixed farming system.

Forests occupy an area of nearly 63 million hectares constituting 20.5 per cent of the total geographical area of the country. In an agricultural country like India, forests play an important role in providing the economic goods. It also helps in maintaining the productivity of agriculture and ecosystem. Apart from the material utility of the forests in fulfilling various requirements of local people, they also help in checking floods, ensuring perpetual flow of water in rivers and maintain a balance between different gases in the atmosphere. Installation of forest based industries near the forests will also provide the gainful employment to nuemployed or underemployed particularly tribals and backward peoples.

Extension agencies or institutions are an important media for communication of farm technology from the research institutions|centres to the farmers.

How trees prevent pollution!

THE PLANTATION OF TREES is beneficial for reducing pollution caused by vehicles etc.

Based on the studies conducted by the National Botanical Research Institute, Lucknow, Banaras Hindu University, Varanasi, Jawaharlal Nehru University, New Delhi; Institute of Science, Bombay; Calcutta University, several pollution-tolerant plant species have been identified. The Department of Environment is also initiating an All India Coordinate Project on plant responses to air-pollutants. The thrust of the work will be to identify suitable species in different regions for reducing air pollution.

There is no specific programme for plantation to reduce air-pollution. However, some of pollution-tolerant species are included in the general scheme of plantation.

Dumping hazards on the weak !

Subhash J. Rele

When some items of clothing, medicine or food are banned in home market of developed countries, the manufacturers have nothing to worry about. They can still sell those items outside, especially to the third world. In this way, in their efforts to minimise the losses, they are free to sell death to unknown customers. And even law can't touch them for this criminality ! The author cautions that the third world should wake to the dangers of this hazardous dumping and learn to fend itself.

DUMPING HAZARDOUS PRODUCTS in the poor, less developed third World countries has become a booming billion dollar business. It also promises to become one of the hottest international controversies of the decade. Each year thousands of tonnes of hazardous products manufactured but banned in the United States find their way into the third world markets. Dumping involve not only manufacturers and retailers, a vast array of export brokers, tramp steamers, black marketeers and go-betweens who traffic an estimated $ 2 billion worth of unsafe goods oversees every year, but also the US Export-Import Bank, which finances large dumps ; the Commerce, State and Treasury Departments which have the statutory authority to stop or control dumping, but won't; and a President, who in his quiet way, subverts the efforts of the few progressive members of the Congress who seek to pass uniform anti-dumping legislation.

More than a year ago, the UN General Assembly adopted a resolution introduced by 23 developing countries prohibiting the export of banned, hazardous products without the knowledge and official permission of the importing country. On the face of it the resolution seems uncontroversial but the Reagan administration cast a dissent vote in a 146-1 vote. The argument forwarded by the American administration was that it would create excessive regulation and restrict free trade. Most of the US manufacturers show no compunction about dumping hazardous products banned in their country on third world people. Dumping does raise hackles in some developing countries but it has no long-term impact.

In the garb of transfer

The wholesale transport of either manufacturing plants or the technology required to produce hazardous goods into another country is also a kind of dumping. Plants may be shifted from sites in the US and located in under-developed countries for a number of reasons including the availability of cheap labour force and energy supply, tax incentives and the avoidance of environmental regulations and occupational health and safety standards. A desperately poor country often will accept a "runaway" plant which produces hazardous goods as the only way to bring in capital investment jobs and tax revenues. When for example, aldrin, a highly toxic pesticide and dieldrin, its breakdown product, were banned in the US in 1974. Shell Oil, quickly switched their production from its California plant to the Netherlands thus enabling Shell to continue exporting the pesticide to other countries. A year after the American ban 13 children died in Brazil of aldrin and dieldrin poisoning.

Dumping has been a favourite money-spinner of several US multinational corporations. Public attention was, however, focussed in 1977, when US manufacturers exported about 2.4 million baby

garments treated with the carcinogenic chemical-Tris, which had been banned from domestic sale. Laboratory tests subsequently showed that Tris caused kidney cancer in children exposed to it at the rate of 300 per million boys and 60 per million girls. The Consumer Product Safety Commission banned the domestic sale of all Tris-treated children sleepwear. While the small manufacturers sought to recoup some of the loss from the Federal Government, two larger multinational corporations safeguarded their financial interest by unloading the stock in Third World countries. More than three years later, Tris-treated fabrics were exported to Ghana. Experts in the trade estimate that tens of millions of pairs of Tris-treated pajamas were shipped quietly out of the US between the time. Tris was banned in 1977 and June 1978 ; when the CPSC slapped a ban on Tris exports. Many of the sleepwear even went to Europe and many more to the under-regulated and unsuspecting lesser developed countries. It is obvious that in such cases checking the number of children who became victims of cancer would be impossible.

Pesticides and fungicides

Several other examples of this sinister practice began to attract public attention. An undisclosed number of farmers and 1,000 water buffalos died suddenly in Egypt after being exposed to leptophos, a chemical pesticide which was never registered for domestic use by the Environmental Protection Agency, but was exported to 30 countries. Another report also surfaced that 400 Iraqis had died and 5,000 more had been hospitalised after eating wheat and barley imported from the US. The grain had been treated with a mercury fungicide banned from domestically used grain.

Women are passive recipients of many potentially hazardous drugs and other devices when low-cost alternatives exist. The intrauterine device called Dalkon Shield has been making sad news everywhere. After the device killed at least 17 women in the USA, the manufacturers withdrew it from the domestic market. It was sold overseas afterwards without let or hindrance, and is still in common use in several poor countries. All over the under-developed world, including India, there are over half a million women with the Dalkon Shield implanted in them and the majority do not know what it is all about. It was recently revealed that the multi-national corporations distributed, with an alleged consent of an American agency, larger quantities of the same contraceptive, 'unsterilised' in the Third World, a practice that would never be allowed in the USA itself. Nobody can give count of the number of women who lost their lives and their health.

Pacifiers that kill

Few hazardous products have created more excitement than the US manufactured pacifiers. Between 1964 and 1975 atleast 7 healthy American babies choked to death on pacifiers. During this time, hundreds of babies experienced near-fatal suffocation, cardiac arrest, brain damage and lesser injuries after swallowing poorly designed pacifiers. It wasn't until October 20, 1976, after many more accidents and several additional fatalities, that the Consumer Product Safety Commission proposed pacifier's safety standards. CPSC's proposed regulations laid that a pacifier should have a shield large enough to prevent it from being swallowed, and have two ventilation holes on the shield to ease breathing if swallowed. Not one single pacifier on the American market satisfied the new standards. In 1977, the CPSC announced a virtual ban on the manufacture of old-style pacifiers. Even before the ban became final, the dump began. The Evenflo Product Co. of Ohio, famous for its baby bottles, exported more than 1,63,000 hazardous pacifiers throughout the world making it biggest dump in Iran, Venezuela, Puerto Rico and the Dominican Republic. Binky Baby Products of New Jersey dumped 50,000 pacifiers in Canada, South Africa and Venezuela. The dump continues even now Not many bother about the consequences.

Toothless task force

The discussion on hazardous product's exports began in the US in 1979 with the formation of a Government Committee called Inter-agency Task Force of Hazardous Substances in Export Policy. The Task Force has hardly any teeth and dumping goes on unabated. Often included in the shipments are banned drugs and pesticides such as Aldrin and Mirex, both of which have been withdrawn from use in USA Random inspection at various docks of food exports found such items as 6,700 boxes of insect-ridden rice bound for Chile ; 3,200 pounds of moulded flour headed for Abu Dhabi and 200,000 pounds of yellow cornmeal contaminated with bird and rodent faeces destined for Netherlands. Regrettably, the current US position is yet another example of the Reagan administration's patronisingly dangerous attitude towards the Third World countries After entering the office, 34 days later President Reagan rescinded ex-President Carter's order which called for an unified notification process whereby the US Department would inform all other nations about products banned or restricted by the White House. Reagan asked the Secretary of State Alexander Haig and the Secretary of Commerce Malcolm Baldridge to re-examine the entire matter. Both of them sent a Memorandum to the President in total agreement with the "'hands-off" position of the chemicals and pharmaceutical industries, the strongest multinational group in the USA.

How considerate ?

What concerned Government officials was that it was perfectly legal and morally justified to dump

almost anything found too toxic or dangerous for American consumption on innocent overseas consumers. The welfare of the poor in the Third World countries has never been on the Presidential agenda. The top brass in the US Administration found solace in the fact that the US was not the only country dumping hazardous products overseas. Several other industrialised countries like UK, West Germany and multinational corporations have been caught in the "unworthy, unscrupulous" act as well.

In November 1979, "Mother Jones", the monthly magazine, released an extensive investigative report on dumping. The magazine detailed a booming trade in banned drugs, unregistered pesticides, dangerous consumer products and obsolete technologies. The export of such products from the US alone was estimated to have reached a volume of $ 1.2 billion annually. The US industries and mncs were furious. In several cases they strongly objected to the Government's intervention. They trotted some indefensible arguments in their defence : they argued that it should be the right (headache) of an importing country to make its own risk-benefit analysis of a product, and decide for itself whether or not to import the products. Secondly, the US should not impose its own standards on other countries. Thirdly, placing controls on products serve as a disincentive to exports and will hurt the country's balance of trade and reduce US industrial production. Again, focussing attention on any one of the products places a stigma on the entire industry that makes it. If importers cannot or do not buy a product from the US, they will simply shop elsewhere.

Criminal offence

The enlightened circles in the Third World argue that the American business leaders who tout themselves as the most ethical business people in the world should lead the way in ending this dumping. It is in their best interest to do so, for by dumping toxins on the Third World they are actually poisoning the very markets they seek to develop. Realising that the current American administration is unlikely to do anything to curtail the flow of toxins and other hazardous products into foreign markets, trade officials overseas have begun to take matters into their own hands. Some countries have taken immediate action : like Zimbabwe suspended the use of Depo Provera, the contraceptive which created havoc with women's health; Kenya banned certain pesticides and medicines. Recently, Bangla Desh banned certain dangerous drugs. Under-developing countries do not have the bureaucracy to control imports—particularly when they watch for tricks that many corporations use to get their products past custom officials.

Recently, the International Organisation of Consumers Unions (IOCU) particularly their Regional Office in Penang, Malaysia, took up the cause. IOCU has brought the dumping crisis to the attention of their 121 member organisations located in 50 countries and activated numerous other consumer advocates and government leaders throughout the Third World. IOCU has also brought the issue into the General Assembly of the UN.

There is no reason why dumping should not be clearly defined by statute and one more appropriate term, such as "illegal for export" be applied to products found to be dangerous in the country of their origin and therefore anywhere. Dumping should be made a criminal offence. Any enlightened Government should find such a proposal sound. The US government, for example, which already controls exports through the Commodity Control and the Bureau Census must accept the responsibility of monitoring the banned hazardous products for export. Nobody expects Reagan to declare dumping a criminal offence. The Third World, in particular, has to fend for itself by boycotting imports of hazardous products from the US and other countries. The industrially advanced First World is too selfish, too self-centered to bother about the poor in the Third World. They are too preoccupied with buliding their skyscrapers of pelf, profit and power. □

Special assistance for tribal development

SPECIAL CENTRAL ASSISTANCE for tribal sub-plan for 1985-86 has been fixed at Rs. 140 crore which is higher by Rs. 14.5 crore than last year. Generally, the Special Central Assistance is utilised mainly for family oriented schemes and such critical infrastructure relevant to the family oriented programmes.

Under the tribal sub-plan, a Special Central Assistance of Rs. 486.62 crore was allocated to states and Union territories during the Sixth Five Year Plan. The Working Group on Tribal Development have recommended a Special Central Assistance of a higher magnitude for the Seventh Plan period (1985—90). The VII Plan allocation is yet to be decided by the Planning Commission.

The tribal sub-plan is an area development plan with particular focus and emphasis on development of tribal population. At present, it covers 75 per cent of the Schedule Tribes in 17 states and 2 Union territories. The Special Central Assistance is in the nature of an additive and is supplemental to the flow from State Plan for the tribal areas.

The expenditure pattern of Special Central Assistance during the VI Plan reveals that about 43 per cent was utilised in sectors of beneficiary oriented nature, 32 per cent on social services, 4 per cent on infrastructure and 21 per cent on other related sectors. □

Andamans' march towards progress

We present here an interview with Shri M.L. Kampani, Lt. Governor of Andamans and Nicobar Islands, by All India Radio Port Blair correspondent, Shri M.R. Madhusudan Varma, which was earlier broadcast by AIR. The interview throws light on the all-round developmental activities of the Islands and the projected targets in the Seventh Plan.

Correspondent :

Development of a remote territory that too distant from mainland separated by sea is a major task. Mr. Lt. Governor, Sir, how do you look at the developments of these Islands ?

Mr. Kampani :

We are separated from the mainland by 1200 k.m. of sea. This distance from the mainland does present lot of problems but these are not unsurmountable. The development of communications between the main land and the Islands has therefore been of great importance in the past plans and we are giving due emphasis on this in the 7th five year plan also. We are dependent on the mainland for most of the items required for development; these include Cement, and Steel, Petroleum products, Food supply, and Consumer items. In each plan major portion of our outlays has been spent on improving communication. In the 7th plan out of total outlay of 285 crores, about 139 crore has been allocated to the sector Shipping and Transport.

Correspondent :

Islands have achieved and exceeded the targets in almost every item of 20-Point Programme in the Sixth Plan. Will you please tell how this speedy implementation was possible ?

Mr. Kampani :

Basically it is due to co-operation which we have received in abundance from the people of the Islands and they have interest in improving their lot. We have a democratic set up with the Pradesh Council at the territory level. We have good Panchayats and you know our members of the Pradesh Council are elected indirectly through three electrol colleges. 14 members come from 43 Panchayats, 5 members are elected from amongst the Port Blair Municipal Board members and 6 other from amongst the Captains of the tribal villages. This body has played an important role in bringing the requirements of the people to the Administration and helping in speedy implementation of the programmes being taken up by the administration. Also we have been able to sanction schemes well in time in the early part of the year so that people can start work immediately after the monsoons when the working season starts. Regular monitoring of the programme has also helped in ensuring their speedy implementation.

Correspondent :

However Islands have not achieved self-sufficiency in most of the spheres including the food front. For almost everything we have to depend on mainland. What steps are you taking to tackle this problems?

Mr. Kampani :

We do not have much land in the Islands. Our total area is 8923 Sq. K.m. Most of it is covered by lush green tropical forests. A decision, therefore, was taken much earlier, and very wisely so, that the Islands territory need not be self-sufficient in food supplies. This was basically done to ensure that more land is not brought under the conventional agriculture at the cost of the forests. We are, therefore, more

keen on developing plantations than increasing the area under conventional agriculture. Our present plans in agriculture are to go in for plantations and intensive agriculture by improving our farm technology, use of better fertilizers, seeds, etc.

Correspondent :

Andaman and Nicobar Islands are unique with the presence of 6 types of tribals. What welfare measures have you taken for the upliftment of these tribals and the primtive tribals like Ongees, Jarawas, Sentenelese and Shompens ?

Mr. Kampani :

As you mentioned, we have 6 tribes. Their total population is about 23,000. Out of this Nicobarese are about 22,000. They are very progressive people and have organised their community life on co-operative basis. The other five tribes, that is, Andamanese, Ongees, Shompens, Jarawas and Sentenelese are in different stages of development. The Andamanese and Ongees have been settled on permanent cultivation and have also been provided with dwelling houses and are living in groups. Shompens are staying in small villages very wisely separated from each other. They are now in contact with the administration and every effort is being made to increase this contact and give them assistance by providing more nutritional food, medical assistance and facilities for catching more fish, hunting, etc. Two separate contact teams have been set up one each for contacting Jarawas and Sentenelese. To ensure regular and continuous contact the team visits the tribes on full moon day Over the months the tribes expect this team to visit them on the full moon day. This has improved the contact with Jarawas and a large number of them come to meet our teams whenever they visit them The Sentenelese, allow our team to land on their islets and leave the gifts, but they themselves remain a little distance. As such, we have no contacts with them but it is expected that we will be able to get closer to them in the near future.

Correspondent :

What are plans to exploit the tourist potentialities of the Islands ?

Mr. Kampani :

The Islands have considerable natural beauty. Islands are endowed with unpolluted clear sea water, lush green forests and mangrove creeks. Islands have also become a land of national pilgrimage as it was here that many of our freedom fighters were sent and put to suffering and torture. We have been developing tourist infrastructure. We have already 2 good hotels run by private parties. They have about 70 rooms and both the parties are thinking of adding more rooms. One more three star hotel with about 60 beds is under construction. The administration has already about 142 beds and are thinking of putting up a hotel and also another tourist room with about 60 beds. The future of the Islands will depend on developing water sports and speedy communications between the islands which have already been opened up for tourists. Every effort is being made to provide this facilities. Another prospective to link up Port Blair with Bangkok. Possibly a fight could go from Madras to Port Blair to Bangkok. This will attract considerable number of tourists from the East. We are trying to improve our air port so that it can take international flights.

Correspondent :

This time Islands have received the 7th plan outlay three times bigger than that of the last plan. What is the reason for this increase and what are the plans and projects planned to be taken in the 7th plan period ?

Mr. Kampani :

In the Islands we are in the process of developing infrastructure. We have, therefore, to spent considerable amount on shipping, on develoment of roads, on power, and other such sectors. As you will see in our 7th five year plan the emphasis has been on shipping and roads. We are going to spend more than 139 crore out of a total outlay of 285 crore on shipping alone. This includes 90 crore for 3 ships which will ply between the mainland and the islands. We also, during the plan, hope to complete the Andaman Trunk road. This road touches more than 300|k.m. between North, Middle and South Andaman which are now seperated by sea. The Middle Andaman portion is ready, 53 k.m. remaining portion in the North Andaman will be completed and about 22 k.m. in the South Andaman. With the completion of this road, there will be less pressure on the ship as far as the northern islands are concerned and people will be able to travel from Port Blair to Diglipur by road. We have also earmarked 13 crore for Kalpong Hydro Electric Project in Diglipur area. This will give us about 3 mega watt of power. We have total installed capacity of 10 mega watt. During the 7th five year plan period we want to increase it to 25 mega watt. We also want our medical cover to improve, particularly the specialist services, to provide better medical care to the people. More emphasis will have to given to animal husbandury as there is considerable scope for the development of cattle, piggery, poultry, goatery and duckkery. There is shortage of good housing. We have to provide better houses to our Government servants and also to the general public. We have improved our fish catch in recent years. Government is very keen in the development of these remote areas.

(Courtesy : All India Radio)

Importance of electronic data processing

Yojana Correspondent

THE UNION MINISTER of State for Planning, Shri K.R. Narayanan, emphasised the need for developing countries to acquire the latest knowledge and all the modern tools and methods for collecting and processing the vast amount of socio-economic data needed for developmental planning and policy formulation. He was inaugurating the sixteen-week long training course on electronic data processing organised by the Central Statistical Organisation of India in collaboration with the Computer Centre of the Department of Statistics, Planning Ministry, with the support of the United Nations Development Programme and the Economic and Social Commission for Asia and the Pacific in New Delhi recently. This was the fourth training course. The first such training course was started in December 1982. The trainee participants were from Afghanistan, Bangladesh, China, Indonesia, Nepal, Papua New Guinea, Philippines, Sri Lanka, Thailand and Vietnam.

The Minister stated that the developing countries needed trained personnel in increasing numbers in all technological fields, especially in the field of statistics, computers and electronics. These were the modern tools and methods with which we could put our old societies, concealed in traditional ways, on new and dynamic paths of development, he added.

Highlighting the importance of training courses like this, Shri Narayanan said that in such training we not only learnt electronic data processing but became familiar and friendly with the mind-boggling new inventions in the ever expanding electronics. He gave a note of caution against the misuse of electronic machines and said, "living as we do in the Asian-Pacific region in ancient societies with time tested values and patterns of living, we must not allow ourselves to be dominated even by the most sophisticated and fascinating machines which were rapidly assuming a kind of life of their own, we must always keep the lead in human hands and lend the machines to our purposes and use them for the development and progress of mankind and of course for the development of our countries according to priorities determined by us. That means we must, first of all, learn how to use these machines and make them minister to human and social purposes".

Shri Narayanan underlined the importance of statistics and said how during the last 34 years statistics in India was serving as the hand-maiden of democratic planning and helped the country in the formulation of its plans and in the resolution of its socio-economic problems. He also highlighted the great importance that the Prime Minister, Shri Rajiv Gandhi, attached to science and technology in development, in taking India into the oncoming 21st century and said that it was important that we in the developing world should not miss the computer and the electronic revolution as we missed the earlier technological and industrial revolutions in history

Highlighting the importance of computerisation, the Minister said computerisation opened new vistas and opportunities for statisticians reducing the time lag in data processing and facilitating quicker and deeper analysis. Storage and retrieval of data, updating of information, and tabulation and analysis of survey results were made easier and more systematic by computerisation thus providing valuable, timely and relevant inputs into the overall developmental process and policy formulation.

The training course comprises Sampling and Survey Methodology and Electronic Data Processing. So far the Government of India has conducted three such courses. Nearly 50 personnel have since been trained ☐

Continuing education for adults

Iqbal Mohiuddin

Adult education is meant for those who can't spare time for formal education, who are not interested in acquiring degrees and diplomas, but want to improve their economic condition by equipping themselves with technical and general information regarding their jobs and environment.

THE EDUCATIONAL process consists of a series of tasks arranged as an ordered development sequence of intellectual behaviours (reading, thinking, memorizing, studying, etc) structured around a body of content that progress from known to unknown, from concrete to abstract and from simple to complex These tasks must be selected and arranged in such a way that the resultant responses insure achievement of the learning objective.

Why continuing education for adults ?

Most of the students in the age group 15-35 cannot afford either to attend or continue their formal education as they are either productively busy or looking after the domestic work or due to economic reasons.

The adults to be covered by the non-formal education are those who cannot afford to wait.

The above-mentioned points suggest that there is a need for developing a non-formal education programme for adults. But in order to develop a relevant and functional programme of non-formal education we will have to take into consideration the characteristics and the needs of the adults.

Environment-oriented approach

On the basis of the experience of the past and the resources and commitment available at present, a workable approach for continuing education for adults is hereby proposed, which may help in developing the necessary competencies in the beneficiaries through the maximum utilization and exploitation of the environment adopting the need and problem based-approach. This may be called as "Competency, Environment-Oriented and Need-based Approach". In order to reveal the nature of this approach it seems necessary to specify these three components and realize their functional relationship

The aim of this approach will be to develop competencies in illiterate adults to understand what they listen and read, express what they want to say and write, to add, substract, multiply and divide numbers etc.

In order to make continuing education for adults environment-oriented the tasks to be accomplished include : practical knowledge of the environment, revealing the potential of the environment in terms of its relationship with the health and vocations of the people. The whole approach should be such as the higher education may develop a healthy and positive attitude and a sense of belongingness to the environment.

In order to adopt the need-based approach local specific and group specific needs and problems pertaining to health, vocation and social and national life should be identified, analysed and understood and solutions for satisfying the needs and solving the problems should be identified Relationship among the individual needs, problems, social values, physical and social environment, and the inter-relationship of all these with different subjects and disciplines should be reflected in the curriculum and instructional programmes in a functional way

Dimensions of curriculum

The role of higher education in the promotion of continuing education for adults should be identified under six categories of dimensions of non-formal-

education curriculum for the adults of rural and urban areas. There are :

1. Health
2. Vocation
3. Environment (Physical and Social)
4. Social Awareness
5. Literacy
6. Numeracy

The identification and clarification of the content included in these dimensions may involve a thought-provoking approach for the development of curriculum and instructional materials by the Universities. These are the basic factors on which a need-based and environmental oriented curriculum may be framed for the adult and continuing education of rural as well as urban areas.

The role of higher education

The role of Universities in the promotion of adult and continuing education in rural areas should be (i) to develop need-based educational activities and programmes for the adults and (ii) to develop suitable instructional materials with the help of different agencies.

The Universities should act as a catalytic agent for boosting up the academic and vocational training activities of the affiliated colleges which collaborate in the promotion of adult and continuing education programmes in the rural areas. A special cell should be established by the universities which will find out and classify the local needs of the adults of the rural India. On the basis of their priorities, the environment oriented and need-based curriculum would be framed and implemented by the Universities for rural areas.

The cell will also be responsible for providing training courses in work-experience etc. for preparation of items such as soap, chalk and candle.

The special cells set up by the Universities should identify the needs and problems of the rural areas and find out the unexplored resources which have not attracted the attention to meet their requirements. The role of higher education will be to educate the adult population to have a sort of cooperative life without sacrificing, their individuality. Due to lack of knowledge and ignorance the illeterate adults of the rural areas do not know as to whom should they contact in case of their economic, social or cultural needs. They should be given full knowledge by the Universities through their specially framed continuing education programmes for rural areas. Similarly, vocation training should also be given to the adults for the improvement of techniques of production. Craftsmen are the essential service class of rural men and the essential service class of rural India. Knowledge of new techniques should be given to them. The role of educationists can not be over-emphasised in the rural sphere. They have to contribute a lot of their expertise and practical knowledge to the adults and continuing education programmes of rural India. Surveys are to be done for finding the needs and problems of the villages and for setting up different cells to cater the needs of the rural population. These specially established cells in the rural areas should give the information to the adults regarding block development programmes, district development centres, rural electrification programmes, rural road development programmes etc.

In urban areas

Again the six prescribed components of curriculum for adults (i.e., health, vocation, environment, social awareness, literacy and numeracy may be applied in urban areas. Urban areas have different problems from those of rural areas. In the cities the population is denser and has special problems. The vocational problems of the urban population are quite different from that of the rural population. The role of Universities for the promotion of continuing education for adults in urban areas should be to identify the types of needs, vocations, identification of local problems, their anlysis and to develop possible solutions of the problems through higher education Having in view the vocational needs in a particular physical and social environment the Universities should provide vocational training courses to the adults of urban areas. Research-based knowledge should be provided to the vocational beneficiaries for the development of their skills. Kanpur being a centre for leather and training industry, the adult workers should be provided the technical know-how for the improvement of the industry. The technical curriculum should be provided through higher education of the Universities Research-based knowledge should be provided to the adult workers who are engaged in them. To provide research based knowledge to the adults of the Urban areas is the purview of higher and technical education. Thus we see what important role the higher education can play for the promotion of adult and continuing education in urban areas.

Promoting continuing education

The system of research in Nalanda University was based on practical knowledge and on-the-spot enquiry. A research scholar was asked to find within the radius of five miles from his house anything which had no medical value. The research scholar did the job thoroughly and returned to the University after five years and reported to his supervisor that he did not find anything which had no medical value. He was awarded degree on his findings.

This was the spirit behind research during the ancient days in Nalanda University. The professional| technical institutes|colleges make enormous contributions through research-based knowledge for the development of science, technology, medicines and agriculture both in rural and urban adults for the improvement of their vocations. Agricultural Universities in U.P. are doing their job well and also provide technical knowledge regarding various aspects of agriculture to the peasants and adults of the rural areas.

The professional and technical colleges produce doctors and engineers for the well-being of humanity. The doctors can help the adults with information about various diseases, teach them about their health, nutrition and hygiene. Health-based instructional material, can be produced for the benefit of the rural and urban population. In the same way engineers can also help the rural and urban population in getting their water problems solved. Buildings, roads, canals, underground drainage system etc. can be provided by the engineers and knowledge about them may be provided to the adults through higher education, training camps, literacy and community centre

Chemical institutes can also help by testing soils for better use either for agricultural purposes or construction works. Broad knowledge of soil can be provided in higher education for the benefit of adults in the rural and urban areas.

Radio and transistors are the cheapest source of communication to the rural population. Even newspapers can not beat them because news papers are (i) costly and (ii) they reach the remote villages very late or sometimes do not reach at all. So the most reliable source of getting latest news is the radio and transistors. But, the people, sometimes, do not know how to handle them properly. Such information should be given in the technical and vocational camps to the rural as well as urban illiterate adults. Universities should develop their own radio programmes for the adults either themselves or with the collaboration of some agencies. These programmes should be problematic and need-based. Universities may create new department for this purpose.

The peasants using tube-wells and tractors for agricultural purposes in the rural areas and the mechanics using machines or other adults using miscellaneous tools in the factories in the urban areas, sometimes do not know how to repair their machines or how to handle them properly at the time of their breakdown. The elementary technical knowledge should be given to them for saving their time and energy. Co-operative shops should be established in the rural areas which can provide spare parts for pumping sets and tractors at the time of need at the reasonable prices.

Coaching centre both at rural and urban levels should be establised by the colleges of education for providing technical education and professional guidance to the adults. Universities may take up programmes on vocational, technical and scientific matter, medical and agricultural aspects etc., for the specific purposes of transmitting the knowledge of their training to the adults of rural and urban areas.

Courses and instructional material may be prepared in the University Deptts. of Education for Adults based on their specific needs and the needs of the region. Teachers and expert education may help in accelerating this programme at both the levels, urban as well as rural. These courses may be taught in the rural and urban community specifically established for the continuing education for the adults

Women's literacy is also an important aspect of continuing education for Adults Programme. Provision should also be made for continuing education for women in the curriculum of higher education. Need-based programmes for women should be chalked out by the Universities and should be implemented for the upliftment of women in society both in rural and urban areas. In this way the colleges, technical and professional institutions can play their vital role in the promotion of continuing education for both adults, males and females in rural and urban areas through higher education.

Now, I have an humble submission for the kind consideration of the people engaged in the conduct of higher education programmes recently started by quite a good number of Universities Invariably majority of these programmes, to my utter surprise, have been confined only to the formal system of education, trying to rope in only those people who are desirous of higher degrees and diplomas for one reason or the other and completely being indifferent to the larger section of adult population who are not interested in acquisition of degrees or diplomas but are in dire need of improvement of their economic plight. To my mind, until and unless they are covered under the umbrella of continuing education unit of the Universities the latter is not worth calling itself a continuing Adult Education Programme. My friends, associated with these programmes in the Universities should give serious thought to it and do something concrete to remove this lacuna.

Review article

Economic policy and planning

M. M. Ansari

IN THE PAST three decades, several volumes have been published on the problems dealing with the major issues in economic policy and planning in India; some have tried to suggest remedial measures. Unfortunately, barring a very few, none appears to have been able to develop a proper perspective for policy planning that should be consistent with both democratic polity and federal structure and mixed economy. The present volume, under review, which has been brought out to commemorate late Professor Baljit Singh, is however no exception.

The book comprises a collection of 23 articles which are grouped into four parts, namely; (i) Technology, Manpower, Demographic change and Development; (ii) Institutions and Development Planning; (iii) Development Patterns—National, Regional and Sectoral; and (iv) Trade, Fiscal and Monetary Policies for Development. A general comment on the book is in order. First, some of the articles are contributed by eminent economists and their views are already known among the economists and the planners. Second, as the articles have been written independently with different objective and perspective and at different points of time, there is no coherence and consistency between them. Each article, however, concentrates on specific theme and some of them raise pertinent issues.

In Part-I, the first three articles provide a detailed discussion on the strategic importance of technology in development of the Third World countries and emphasise on the need for technological transformations of such countries for accelerating the pace of development. While the fact is that almost every country is making its utmost effort to make use of available technology for bringing about desirable improvements in efficiency and productivity, their success is greatly hampered by both the non-availability of adequate physical and financial resources to acquire technology and the reluctance of the advanced countries to transfer the appropriate technologies. The dilemma however is that while the developing countries have jointly raised the voice at the international forums for transfer of technology, these countries have not made desirable endeavours for extending the application of the available technologies in all the sectors of the economy and regions which are within their purview

The article on approaches to planning for employment creation in rural areas has rightly emphasised on the need for strengthening linkages of the type indicated above. The analysis has however been carried out in isolation from (i) the role performance of the rural development programmes which have been implemented during the Five Year Plans; and (ii) the extent to which the present rural employment schemes and rural economic activities are inconsistent with the activities of the organised sector. In fact rural and urban economic activities has been playing a complementary role, though this role could be revitalised and strengthened through appropriate policies; such policies could have been detailed in the light of our past experiences.

The evidences on interlink between the demographic conditions and the major socio-economic indicators of development are noteworthy. As may be expected, the relationship between fertility and income, employment and education indicate changes in the desirable direction. Indepth upto-date studies on these aspects would undoubtedly assist in formulating appropriate policies from time to time.

The application of regression approach as has been tried, in the subsequent article, to determine the extent of relationship between labour supply and earnings, is not ideally suited to the kind of data which has been used in the study. Infact, the informations characterising qualitative aspects are not easily susceptible to measurement. One would expect on *a priori* grounds that acquisition of skill and age factor (experience) would be positively associated with earnings. The result however show a negative relationship, meaning thereby, increase in age and improvement in skill would adversely affect the labour earnings. The results contradict the theoretical expectations which could be attributed largely to mis-specification of the econometric functions. As many of the users may not be fully aware of the intricacy from which the results are derived, the inferences drawn from such exercises might lead them to misplace policy emphasis A great deal of caution ought to be exercised therefore in both selecting the methodology and drawing the conclusion.

In Part II, while making observations regarding the functioning of the Union Planning Commission and the performance of India's mixed economy, the authors have rightly emphasised the need for relaxation in the central control over the functioning of the Commission and for revitalising the operation of the mixed economy. In both the cases, a considerable political will would be required to effect certain socio-economic changes in the country through appropriate reforms, so that economic activities could be increased through increase in people's participation

A major area of concern, namely, agrarian economic structure, has been discussed in another article, which focussed on the problems and dilemmas of land reforms and points out the responsibility of the elite class in activising the forces of economic change. Needless to mention, as compared to pre-independence

Economic Policy and Planning in India; Edited by A.K. Singh T.S. Papota and R.S. Mathur, Sterling Publishers Pvt. Ltd., 1984 Rs. 200/- P.P. 467

era, a considerable degree of land reform has already taken place and a lot is still being done in various parts of the country. It is, however, difficult to arrive at a consensus as to what extent such reforms could be carried out, given the constitutional provisions for property rights and more importantly, the domination of property owning class and wealth capitalists in the decision making process In the Indian context, the socio-economic settings which is characterised *inter alia*, by both federal and democratic polity and mixed economic structure, the different aspect of property relations ought to be reckoned with in proper perspective. Nevertheless, it has rightly been argued that the elite group should make a concerted efforts to create such conditions which would increasingly help involve peasantry class as agents of change in the process of development. This would however require both strengthening of rural based development personnel who may be responsible for implementing the programmes and mobilization of target groups so as to increase the responsiveness of the latter in order that optimum results could be attained. This aspect has been clearly brought out in another article on rural development personnel

Public Distribution System, as examined in the book, has been one of the major policy measures for ensuring efficient delivery of some of the essential consumer goods at reasonable price, to the weaker sections of the society. An assessment of the performance of the system over the past two decades indicate several deficiencies and shortcomings which largely emanate from administrative inefficiency (including corruption) and mis-management of the distribution system. It has therefore been rightly suggested that a proper re-orientation of the system is a must with a view to ensuring effective distribution of the essential goods which largely serve the interest of the poor people.

The articles devoted to describing the patterns of development, in part-III, are seemingly imbalanced in their coverage. Out of the five articles, four deal with agricultural aspects of India's growth (including one on the development of hill regions in a state), the remaining one is devoted to discussion on rural industrialization. None of them has examined the overall inter-regional and the nature of sectoral change over the plan periods, the study of which is imperative for drawing a well conceived policy conclusion. While examining the impact of drought on production of food grains, it has been suggested that Agricultural Stabilization Tax-Expenditure Scheme (ASTE), which is in essence a crop insurance scheme should be implemented so as to protect the interests of crop growers. Under this scheme 'the sum of premia collected should equal indemnities paid over a period' Though the scheme appears to be laudable, it raises a number of questions about its implementation aspects which unfortunately, has not been cared to examine while making this proposal

The comparative study on growth of agriculture in Punjab and Haryana has clearly revealed, as may be expected, that agricultural output is positively associated with the extent of use of modern inputs. The study has moreover shown that the gains in output may get neutralized if there is large increase in agricultural work force

The article on the development of hill regions ignores many vital points while arguing in favour of the development of such areas, though it rightly lists down the positive gains from hill regions. The unit cost of development in the areas characterised by hill regions is generally so high that the different criteria which determine the allocation of resources across the regions do not favour massive deployment of funds in the areas where from the returns are relatively non-optimum. This problem is faced particularly in a resource deficient country like ours. Ever since the Fourth Five Year Plan, all the hill and tribal regions have been classified under special category states and are given special treatment by the centre in regard to the distribution of central assistance. The examination of the impact of such measures would have been useful than merely cataloging the reasons for huge plan outlay in such region. After all, a high magnitude of resources which is sought to be diverted to the backward regions is to be drawn largely from the advanced regions. Therefore, at the initial stages of development relatively potential regions ought to be developed at an appropriate pace. The article dealing with the development of hill areas in Uttar Pradesh has unfortunately ignored this vital aspect.

One of the approaches of rural development is no doubt to pave the way for speedy rural industrialization which, in turn, is contingent upon some of the essential infrastructural facilities like power, transport and communication and markets etc. Besides this, in the present age the extent of industrialisation is heavily dependent on the application of scientific knowledge and up-to-date technology. In a country where more than 60 per cent of people are illiterate and, of which, a considerably large proportion live in rural areas, how can we expect rapid industrialization without having extended adequate infrastructural facility and without having provided required minimum level of education and entrepreneurial capacity? While the need for rural industrialization should not be underrated, the essential pre-requisites ought to be met so as to expedite the process of rural industrialization.

Moreover, the existence of some of the giant oligopolistic firms would entail effective protection of rural industries from the sweep of competition posed by non-rural based manufacturing concerns. This problem could possibly be tackled through effective regulatory measures for demarcating lines of both the products as well as technology between rural and non-rural areas in order to ensure that the use of a relatively high technology and modern managerial capa-

city of the latter do not encroach upon the industrial activities of the former areas and take undue advantage. This however is not so easy to do, especially when political will is lacking.

The last part, IV, runs under the heading of Trade, Fiscal and Monetary Policies for Development. There is however no attempt in any one of the articles to assess the economic performance in the light of the relevant policies pertaining to India's foreign trade and fiscal and monetory policies even though this part is devoted to examining this aspect. Probably, none of the articles included in this part of the book, intended to attempt to make policy analysis, though the theme chosen for discussion has been ably dealt with in some of the articles.

In the recent times there has been world wide discussion on international economic relations The major issues in inter-country trade relations are duly highlighted in one of the articles, as may also be found in the documents of certain international UN agencies.

While the paper on the states' plan finance reads well and advances the argument that federal transfers have been increasing over the years and are generally progressive, it reflects a somewhat biased view, in favour of the centre, by ignoring the fact that : (i) the aggregate financial transfers to the states on all accounts as a proportion of the total national resources has been steadily declining in the recent times;(ii) the performance of the centre in mobilization of resources has been relatively poor than the states, and (iii) the statutory powers of the centre in raising internal and external resources are more than the powers enjoyed by the states (Yojana Sept. 16, 1984). Since the author's analysis in the book has been trickly presented, the arguments may not be tenable by most of the state governments, including those ruled by the same party which in power at the centre.

The discussion on taxation policy and integration of monetary variables in the growth models, in the subsequent three articles, are of academic interest and a voluminous literature on the related subject can be found every where. In these articles there is no worthwhile original analysis which might have a bearing on policy planning in India

The last article on sectoral shifts in employment across the regions is unduly grouped in this part which is not devoted to regional analysis. Surprisingly, the article concludes that the effects of population on agricultural employment and productivity is almost neutral over the years. Contrary to this finding another exercise presented in the book and as already commented upon above, has demonstrated that increase in population has adverse impact on both employment and agricultural output While examining the determinants of employment patterns and interpreting the results, the *a priori* justification of the multiple-regression equation, from which the conclusions are drawn, should have been ascertained. The findings of the study that the pattern in employment has been shifting from agricultural to non-agricultural sectors is duly corroborated by other studies also.

In this part of the book some attempt to empirically examine the savings and investments behaviour in the past would have been of immense value from the point of view of both to justify the coverage of the book and to provide useful literature to users. Likewise, the study of potential capacity of the Indian economy and the methods by which the emerging needs of the country could be financed would have been a welcome addition.

It may be hoped that the second edition of the book, if brought out, would duly incorporate the changes indicated above and would focus on the problems which the title of the book i.e. economic policy and planning in India, encompass under its purview An attempt in this direction would indeed be good endeavour to commemorate late Professor Baljit Singh While the editors effort to compile rich materials at one place is commendable and is extremely useful for students as well teachers, the price of the book at Rs. 200|- is too high and is therefore beyond the affordable capacity of many students who may necessarily like to benefit from the book. □

HUDCO loans for rural housing

The Housing Urban Development Corporation (HUDCO) sanctioned an amount of Rs. 183.58 crore for construction of rural houses during the Sixth Five Year Plan.

Out of 8,65,983 rural dwellings in various States sanctioned by HUDCO during the Plan period, 5,80,377 dwelling units had already been completed and another 1,55,846 units were in progress. □

Production and export of tea

THE TEA BOARD in consultation with Tea Industry has formulated proposals for increasing tea production from a level of 645 m. kgs. per annum to 760 m. kgs. in the Seventh plan period.

The proposals envisage an investment of Rs. 900 crore on various measures such as extension, planting, replanting, rejuvenation, soil and water, management of factory, modernisation and research. Achievement of this target will enable India to maintain its predominance in tea production and exports. □

Strategy to meet demands for steel

THE PRODUCTION from the integrated steel plants is being stepped up and during the current year itself the public sector steel plants are expected to put an additional half million tonnes of steel into the market. This is to ensure that the steel requirements of consumers in the country are met fully.

Another half million tonnes is expected to be produced by mini steel plants and re-rollers. As such, indigenous availability would go by about a million tonnes in 1985-86 as compared to the previous year. The balance of unsatisfied demand would be met by imports and the flow of imports is monitored so as to ensure that there is no glut as it arose in 1983-84.

It had become somewhat more difficult to serve the needs of smaller consumers in recent years because of the decline in availability of piecemeal wagons from the railways. Steel Authority of India Limited (SAIL) needs approximately 35 per cent of its wagons as piecemeal wagons to meet demands of consumers who needed less than rake loads. However, SAIL had only been getting about 20 per cent in the form of piecemeal wagons.

The Government is engaged actively in taking steps to bring about an improvement in the performance of SAIL. The chief executives of the steel plants are being given greater freedom of action and along with this accountability is being more strictly enforced. Government is determined that the steel plants should operate on commercial line as far as possible and that managers are given the freedom to manage. It is only on this basis that accountability can be enforced effectively.

With the commissioning of additional capacity of Vizag, Bokaro and Bhilai steel plants, the present gap between demand and supply which is 1.5 million tonnes, will come down to .5 million tonnes by 1990—95. However, unless additional capacity is created in the country, the gap between demand and supply by the year 2000 would go up to 5 million tonnes. The Government is planning to liberalise the licensing policy for private sector mini steel plants based on modern technology so that they can grow and help to fill this gap. □

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To improve working of IRDP at block level !

A HIGH POWER COMMITTEE in the Planning Commission is looking into the question of improving the administrative set-up both at the block level as well as the professional technical services level for the implementation of Integrated Rural Development Programme (IRDP). This Committee, whose tenure has been extended up to December, 1985, would suggest infrastructural set-up for a number of programmes already announced apart from suggesting steps to involve democratically elected institutions at the local levels for the formation and implementation of these programmes during the Seventh Plan period. The Committee would also study the feasibility of decentralised planning at the district level with a view to integrating rural development schemes with the local development programme.

Though over 49 per cent of the sample households below the annual income of Rs. 3,500 have crossed the minimum income level as against the target of 30 per cent, the Government has identified a number of infrastructural bottlenecks.

During the Seventh Plan period, the efforts would be to ensure effective implementation of IRDP, especially the problem of integrating beneficiary-oriented programmes with area development programmes and with the development of agriculture in the rural areas as a whole.

Under the IRDP, 35 lakh households have been covered by 1984-85 as against the target of 30 lakhs. The overall number of families covered during the Sixth Five Year Plan 1980-85 have been over 15.4 million as against the target of 15 million. The Scheduled Caste and Scheduled Tribe beneficiaries which form the poorest segments of the rural community have been benefited from 28.6 per cent in 1980-81 to 44.17 per cent in 1984-85, thus crossing the stipulated target of 30 per cent.

The Plan expenditure on account of IRDP, though lagged behind the target during the initial years, increased in the later years. Credit mobilisation also went up steadily from 289.05 crore in 1980-81 to 836.28 crore in 1984-85.

During the Sixth Plan, the IRDP benefited a total number of 16.5 million families or a population of about 80 million. The number of villages covered under the programme was 5,86,000. The total number of villages in the country is a little over 6,00,000. □

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Focus on anti-poverty programmes

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The renaissance, Gandhian style

NEXT ISSUE

Spotlight on social forestry

Kharif crop prospects brighten!

THERE ARE GOOD prospects of reaching the kharif foodgrains production target of 89.2 million tonnes following widespread and continuous rains received over large parts of the country during the current monsoon season.

There had been less than normal rainfall in West U.P., East Rajasthan, Karnataka, Maharashtra and Gujarat and floods have also occurred in parts of Kerala, Punjab, Bihar, UP and Assam. In a country of the size of a continent such deviations from normal levels of rains are not unusual.

A review of the Union Ministry of Agriculture and Rural Development shows that the overall condition of crop growth is reported by the States to be satisfactory so far, except for minor aberrations in some areas. Due to continuous rains, the incidence of the bacterial leaf blight on rice was reported from the Northern States like Punjab. Moderate to severe attack of pests on cotton has also been reported from Punjab, Bihar, Haryana, Rajasthan and Andhra Pradesh.

The Department of Agriculture has arranged to provide 31 60 lakh quintals of certified and quality seeds of cereals, pulses and oilseeds through public and private sector seed producers. Plans have also been made to supply 47 lakh tonnes of nitrogen, phosphate and potash nutrients which is a 21 per cent increase over actual consumption during kharif, 1984. By mid-August, 80 per cent of these fertilizers were available for supply to farmers. There has been no report of shortage of inputs.

The Ministry of Agriculture and Rural Development has set a target of 160 million tonnes of foodgrains—89.2 million tonnes during kharif and 70 8 million tonnes during rabi, for the current year.[ ]

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The renaissance, Gandhian style Panchayati Raj in Karnataka !

S.K. Dey

S.K. Dey recently visited Karnataka to study the likely fall out of involving people at the grass-root level, in the process of development, through implementing the new Karnataka legislation on Panchayati Raj. This new move, says the author, is far ahead of any thing in the devolution of authority, responsibility and resources to the people upto the village, till now in India. Quoting Nehru, he adds, a society can move in Health only when there is political democracy at every link of the national chain. Here he highlights the main features of the legislation and welcomes the Prime Minister's announcement to strengthen Panchayati Raj in the country.

TODAY RESTS ON the foundation of yesterday with all its lights and shadows. Tomorrow bustneed be based on the strivings and balance-sheet of today. History is a process that life is, despite the tempering with its records, wilful or otherwise.

The erstwhile States of Mysore, Travancore and Cochin had been a distinct contrast. Their geometry, ecology, administration, culture and living, amongst the five hundred and odd Indian States during British Raj, had been totally different. Indeed, the panoram and people by and large were poles apart from the counterparts especially in the Aryavarta in the North When Independence came, these three States stoo far ahead necessarily on the scale of time The State reorganisation added but to the dimension as well a the dynamism in them. Mysore, enlarged to Karnataka, stood as an outstanding umbrella, compare with the other two, then merged into the new Stat of Kerala.

The land and the people

The rule from above, even with its benevolent an righteous character at the top, had percolation c its own. This found expression in an aristocratic an feudal class structure in society. There followed dependency in people all too typical in a feudal system even in the most altruistic one. Mysore could hardly be an exception even after its expansion into Karnataka. The proverbially poised and cultured society found no royal road for a readjustment from feudalism to democracy in the new citadel of power. An interregnum with a kaleidoscopic turn of events in politics followed as the most turbulent transition in the history of Karnataka. Nijalingappa came in a the midstage as the Chief Minister and Ramakrishna Hedge caught in the mill of politics ever since he had come out of the University of Lucknow. He was the Minister of Community Development, Panchayat Raj and Cooperation.

Jawaharlal Nehru, the Prime Minister, came to inaugurate a conference organised of all the village and Taluka Panchayats from earlier times, gathered together at Lal Bagh. Nehru's speech appeared more

as a dialogue to associates on a common task. Even after more than twenty years and more, it appears as poignant and prophetic as regards his vision of this great land of ours and the road to be traversed if the nation were to be faithful to history, as nature had designed her to be.

One can present here but the quintessence of Nehru's thoughts which I had the unique fortune to share over time. This poverty of ours, he emphasised, is unique in geography, history, texture and character. The purpose of development, looking superficially, is to promote the physical resources and amenities conducive to a rising level of life. But what is of the foremost importance in history is the measure of people in character, competence and self-reliance to manage their affairs, both as individuals and communities. When people begin to manage with a consensus of the needs and resources as a whole, there is an upward rise in their scale of values and efforts. Their capacity to rise and manage extends progressively to encompass the nation as a whole. "It is the quality of the human beings alone that can make a nation great", not some random individuals, howsoever mightly they may look to be for a time.

Nehru and Panchayati Raj

While elaborating the theme, he had stated that a society can move in health only when there is political democracy at every link of the national chain. He looked on this not in geographic terms but as part of an organic "process". He designated it as "Panchayati Raj" without which, he declared, democracy cannot sustain and stabilise anywhere, any time. Economic democracy is a system, according to Nehru, that stood as a balancing force between the public sector at one end and the private sector on the other. He called it Sahkari Samaj. It will deal with the day-to-day needs of the multitude—credit, marketing, processing, storage, consumer needs, all linked in a network of specialisation from the village up to the national level.

The yawning gap stares progressively sharper between the "Haves" and the "Havenots". Nehru called for the third new process—Samuhik Vikas (Community Development) with special emphasis on, and participation from, the growing number of the deprived. The pressure—political, economic and social, sprouting massively from the roots cannot but impel the spontaneity of simultaneous pulling down and pushing up of the community as a whole ; free largely of malice and violence in the process. A good Government is one that helps people increasingly to help themselves. It raises the stature of the Government as such, to look after supervision as perspectives, research, training, evaluation and overall planning. It coordinates resources and activities both human and material. It ensures their optimum utilisation to the service of the people with the minimum of leakages in between. A Government that continues to proliferate and agglomerate in its hierarchy and personnel, cannot but uproot itself from people increasingly. With the feudal instinct still vitally dormant in us and likely not to die for the asking, it is inevitable that autocracy will grow in one guise or the other. Sad, but true.

The new legislation

The great Congress Party of yore ruled intact in Karnataka. Hegde, as Minister in-charge of what constituted the basic mission of Nehru, was asked by the legislature to draft a legislation on Panchayati Raj from the district down to the village. Things as they were, the draft, when ready, was not approved. Panchayati Raj did not however escape the mind and heart of Hegde. Later other things seemingly most unexpected began to happen including the division of the erstwhile Congress in its historic meeting at Bangalore. Emergency intervened inevitably, leading to Janata Rule at the Centre in 1977. Through the special initiative of Hegde as the General Secretary of the Party, the Ashok Mehta Committee was asked by the Janata Government to make a review of Panchayati Raj and recommend a pattern suited to the new age. The report came but was never presented to Parliament.

The Janata Government at the Centre collapsed. A stern period of acrobatics in deeds, words and blood followed, till the new Government of Rajiv Gandhi came in. In an interregnum, the Janata Party with a motley combination came to power in Karnataka. Hegde came in as the Chief Minister. A new Panchayati Raj legislation was framed and passed in the legislature. After a year, the bill is back with concurrence by the President of India. The Legislation is far ahead of anything in the devolution of authority, responsibility and resources to the people upto the villages, till now in India. The next chapter of implementation with its revolutionary implications is about to begin. The Hegde Government has a firm majority in the Legislature.

Under the ancient benign rule, there came Dewans of outstanding calibre beginning with late Dr. Visvesvarayya the living definition of a genius in administration and development. The State had built up an infrastructure of administration, science, technology, communications and development, an envy of generations to come. Even all the turmoil, mostly political in character, that followed during the transition following Independence, failed to shake the solid foundation. The State still is ahead of the rest of India, a fact to be seen to be believed. There is hardly another State and people better suited to face the trials that must need preceede the sea change from total dependence to self-reliance that Panchayati Raj demands as a mission.

Harnessing the nature's gifts !

The people of Karnataka as a mass, are decent, soft-spoken, soft-mannered, irrespective of their economic or social status. Nowhere else in India has the author seen or heard, during a fortnight, any form of vulgarity in language or manners, whether within or without, on the streets. Karnataka derives its roots also the easy flowing nature from the ever spring weather virtually throughout the State except on the coastal region. The depth and sobriety in culture spring from the long past from behind. The geography, ecology of the State offers minerals in abundance below and vegetation ever green covering every aspect of agriculture, horticulture, animal husbandry, poultry, sheep-breeding, sericulture, apiculture and condiments, spices, aromatics beginning with Sandal wood—and everything conceivable that could spring from mother earth anywhere in the world. With the Eastern and Western Ghats meandering across the undulating landscape, Karnataka appears as a canvas—a painter's delight. It is a veritable paradise with flowers for the eyes and victuals for the body abundant in all seasons. The people and their erstwhile rulers were born in the symphony of nature. No wonder Karnataka excelled in music—the most classical—for the whole of the South.

The innovative features

How to tap this unique gift a nature including sanctuaries—historic, to the service of the million ? The inertia of the people looks up for guidance rather than peep unto themselves. The new bill on Panchayati Raj is, and should act, as the appropriate answer to the dilemma facing this great State. It can act also for renaissance of the State and its good people to a new peak of culture in politics, economics and social science. It will provide a single line administration from the state headquarters down to the remotest village inter-locked from level to level through a hierarchy of officials and directly elected representatives from the masses. The legislation provides for the total transfer of authority, responsibility and resources to the Zilla Parishad so far as development is concerned. It would be headed by MPs, MLAs from the respective district with representatives directly elected from constituencies of approximately 35,000 people except in sparsely populated areas. The President and the Vice President will have status, emoluments and perquisites as a Minister of State and Deputy Minister respectively They will be serviced by a "Chief Secretary" of the status of a Deputy Commissioner. All departments of development with staff, institutions and committed resources will vest directly in the Parishad served by a series of functional committees involving all the members in specialised decision making. There will be annual allocation for every district under Five Year Plan together with special auxiliary funds at their discretion. There will besides be authority for taxation on diverse fields. All these together with people's own voluntary contribution must add up significantly to the substance of resources to carry out what the people need and are prepared to have a stake in.

What applies to the Zilla Parishad applies likewise to the executive institutions now coming up as Mandal Panchayats. This will comprise a population of approximately 15,000 coming down as far as to 5,000 in backward, tribal and scheduled caste areas where the new constituency could be of a population of 5,000. In 19 Districts, 175 Talukas, there will be approximately 3,000 Mandal Panchayats instead of the erstwhile 8,000 non-viable village Panchayats in the State with a current rural population of approximately 30 million. The legislation covers virtually the entire list of subjects inter-related for development and basic welfare of the people. It also covers programmes of their own, those delegated from the Zilla Parishad and what additional programmes they wish to pursue from special funds of their own including taxes and voluntary contributions. It will be the obligation of the President and the Vice President of the Mandal Panchayat to hold at least two meetings a year of the Gram Sabha. This is in every village or Mandal Panchayat member's constituency for planning the next year's programmes and reviewing the current operations that can be presented to Mandal Panchayats for cosideration and as a base for future planning by the Zilla Parishad from year to year.

The Taluka Panchayat now abolished shall be designated as the Taluka Panchayat Samiti, consisting of members of the Zilla Parishad, hailing from the area. There will also be the hands of Mandal Panchayats as members, numbering between 10-15, besides 5 members specially coopted from Scheduled Castes or Scheduled Tribes and from women in the Taluka. This will offer a forum for cross fertilization between different Mandals in the Talukas, also better coordination between technical agencies now located at Taluk level in the service of the mandals assisted by the Taluk Development Officials. The Block Development Officer, reduced over the years to a gentleman at large, dealing with public relations and the odd jobs of miscellany in the Taluks, will perhaps be redesignated as Taluka Development Officer in the new context.

Active involvement of wome i

As for as Sahkari Samaj is concerned, the legislation and institutions are already there but, alas, largely in a moribund State. An institution designed for success to be apolitical turned into refuse for all demagogues during the years. This can be taken in hand only after Panchayati Raj has been installed in position The most extraordinary development in the Panchayati Raj system in Karnataka will be that 25 per cent of constituencies will be reserved both in the Zilla Parishads and the Mandal Panchayats for

women members—a process hardly ever practised by any State of the world till now, leave aside India. Time alone can vindicate if or not this alone could bring women to the forefront in terms of equality and equity between the sexes and the far-reaching implications in turn.

The long road ahead can naturally not be entirely immune from perils and cross roads in behavioural patterns. Democracy is a must if men and women are to stand equal and erect. No other course seems feasible, to offer even a beginning of the beginning for the human kind as the born king if animals. The minister of Rural Development will have the task of bringing the institutions into position, getting them trained for acting the local Governments in the fullest sense of the term. These should be oriented to be the action arm of the development departments of the Government while engaged, all of them, in "man making" as the key issue.

The audit of accounts, periodic evaluation, in both individuals and comprehensive context, will have to be entrusted to organisation independent of the department There will be need for Consultative Committee attached to the Panchayati Raj Department consisting more or less of pro-rata representation of all parties in the Legislature and Council. The Institution of Development Commissioner must become alive again to act as official bond of the entire bureaucracy serving Panchayati Raj from State Headquarters down to the remote hamlet.

Departmental heads incharge of technology and extension at State headquarters will have to undergo a switch over from General administration by them. They will have much greater opportunities hereafter to concentrate on technical research, infrastructures, supervision and allied fields for a vertical rise and adjustment in knowledge extension as well as problem hunting. In Karnataka, the quality of technical staff in every department in the State is of an order second to none in the country It is sad on this background, when one looks at the low intensity of the cultivation on land The silting up over more than a hundred years of tanks, lakes and lagoons, numbering more than 20000 is tragic These gape at us today minus adequate water—minus pisciculture—minus additional fertile land reclaimable when the tanks are desilted on a plan and worked out by the land army and the landless combined.

A step towards creativity

Karanataka has the potential of producing every bit of nutrition in every form to be a model for the nation. It may as well be partial source of supply to India as a whole throughout the year. The politicians of tomorrow have to stake their body and soul to this giant task that beckons yonder The principles of Panchayati Raj as prescribed in the legislation offer room for work-creative beyond description to keep the devils in each of us at bay. It will offer the finest opportunity for members of all parties to act as coalition all along the line in touch with people on Mother Earth hardening their legs and hands rather than blistering their tongues People are in good health mentally, emotionally. They can and will rise above the easy going way, weather notwithstanding. Examples are needed. No longer, precepts!

Strangely enough, no other State had been designed as if by providence for a rural-cum-urban continuum from the State headquarters down to the remotest hamlet The state is divided into 19 districts, 175 Taluks, 750 Hoblies and now nearly 3000 Mandal Panchayats embracing the 27000 revenue villages Karanataka had been a pioneer in technology thanks to Visvesvarayya and the others who followed District headquarters and Talukas are urban units already. The Hoblies are rural-cum-urban small units in the making. In 15 years, these should grow to be towns like Talukas. The Mandals with the villages as their satellites already stand electrified. With sharp progress in agriculture, horticulture, sericulture, spices and allied fields, cold storage, processing, canning of fruit and rare vegetables will offer a fabulous field for employment and export to other States Canes, bomboos and timber of special kind offer a new field of endeavour. These agro-industrial endeavours, carefully planned and yoked to manufacture in the countryside of the new tools, implements and the hosts of service and maintenance centres can be an ever-expanding field for employment and extension of science and technology to the countryside Unemployment and malnutrition in such a State as Karnataka is a crime against oneself and humanity at large.

If Nehru were to be resuscitated to his vision and spirit, the most fertile soil, to start with, will be Karnataka One may leave most of the others including the "Bhandralok" communists alone for the present with the paradise they seem happy to play with life No wonder, Karnataka took the cudgel in hand when others had virtually forgotten what Nehru stood for as the highest priority. From Karnataka rise a new wave flooding the whole of India including Aryavarta, now as Khumbkarna, on a sleeping spree and retreat. Who knows, the world of developing nations also will not bask, to emulate India as Gandhi wanted when we could get the last man to find—a forum offered under Panchayati Raj and the leadership he needed and has missed heretofore

What is needed

India demands nothing short of a convulsion, neither violent nor abstract It calls for an upheaval—political, economic and social The turmoil that rocks us till now whether in the North, East or the West, is just the backfire turbulence of a latent volcano that had been fuming within far too long Our political, economic and social scientists have been too over-powered and hypnotised with the occultist vulgarity to which science and technology have given

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Has IRDP helped alleviate poverty ?

Naseem A. Zaidi

The author says, due to the absence of a clear-cut planned approach and right strategies, IRDP and similar other programmes have not yielded the desired results. The number of families lifted above poverty line is far below the expectations. He feels better results can be achieved by a proper integration and coordination of different programmes. Initially the poorest families should be covered by wage-employment schemes like NREP. Endowment-based programmes (like IRDP) should start only from the viable group of the poor who has the capability to retain, manage and replace the assets provided.

AT THE THRESHOLD of the Seventh Five Year Plan it is high time to examine the strength or weaknesses of the rural development programmes so that a correct strategy may be adopted for the years to come. There is nothing wrong with the 'basic strategy' of rural development enunciated by the Planning Commission, in its words "Strengthening the socio-economic infrastructure of development in rural areas, alleviating rural poverty and reducing regional disparities", yet the objective seems hard to be achieved if one goes from 'basic strategy' to 'operational strategies' of rural development

Why earlier programmes failed ?

The earlier programmes for rural development like SFDA, Food for Work and MFAL, etc. failed not due to financial constraints but as a result of the absence of a clear cult planned approach to the development of the rural poor as an inbuilt process in the development of the area and its resources. The current programmes for rural development including the Integrated Rural Development Programme—the main hope of the Sixth Plan to ameliorate the lots of poor, seem to have the same doom IRDP may be successful in terms of number of households benefited (15-16 million), in terms of total amount of credit and subsidy or in terms of per capita household investment which increased from Rs. 1411 in 1980-81 to Rs 3164 in 1982-83 (Mid-term Appraisal of the Sixth Plan, p 49), but as the various case studies reveal, it has failed to achieve the main goal, i.e., lifting the poor people above poverty line, though some increases in income were experienced.

Most of the studies in the field do not make adjustment due to rise in prices during the period between 1977-78 (when the criterion of poverty line was adopted) and 1984-85, the last year of the Sixth Plan, while studying incremental incomes. The percentage of households lifted above poverty line after making adjustment for this factor ranges roughly from 15 to 25 In his study, N. Rath* made adjustment of one more factor annual repayment instalment of the banks—as in his words "the extra income earned might be the un-paid dues of the banks."

On the assumption that 15 per cent of the beneficiaries were wrongly identified (as they did not belong to the category of poor) the number of poor beneficiaries lifted above the poverty line according to his estimates, may not exceed 10 per cent. Rath concluded, "It would not be far wrong to estimate that at the end of seven years of operation of IRDP, about 3 per cent of poor households in rural India

*Garibi Hatao : Can IRDP do it ? by N. Rath; Economic and Political Weekly, Feb 9, 1985

would have been helped to live above poverty line." Though targets were achieved in other programmes like NREP or, TRYSEM, yet the income earning capacity of the rural folks was not appreciably increased.

Wrong strategies

The dismal performance of the Sixth Plan in the field of rural poverty alleviation was, among other factors, due to wrong strategies adopted. The present study tries to highlight these lacunae in the operational strategies for rural development. The programme could not achieve the desired results due to the following problems .

(i) All the schemes meant for alleviation of poverty are organised in unplanned and unitegrated manner Alleviation of poverty requires a comprehensive planning on the basis of resources and requirements at district level, disaggregated on block level, based on practical possibilities of development in agriculture and allied sectors. Instead of comprehensive planning, the various schemes are carried on ad hoc basis. A base line survey of rural households followed by credit camps for identification of the beneficiaries are the pre-requisities of IRDP, but at several places, like in Aligarh District (U.P), the programme was started as early as 1977-78, but both the pre-requisites were not fulfilled The problem has resulted in wrong identification of the beneficiaries, their number in some cases is as high as 40—50 per cent.

(ii) The programmes meant for resource and income development are not well integrated with the availability of supporting inputs and services on one hand and outlets for marketing of the output on the other. The Draft Sixth Five Year Plan visualised an integrated plan of development at block level, within which a special beneficiary oriented plan for the poor was to be appropriately fitted. But IRDP remained a completely isolated programme concentrating on isolated inputs without intermingling them to provide additional productive assets.

(iii) The case studies on livestock and dairy industry reveal that the beneficiaries were not really benefited due to absence of health cover, non-availability of good quality fodder and feed, grazing facilities and proper shelter in case of sheep and goats. In a case study undertaken in five States it was revealed that 51.5 per cent out of a sample of 206 beneficiaries suffered from the high mortality rate among cattle due to lack of timely health cover. In case of repayment of loans, 24.1 per cent were defaulters and 25.6 per cent irregular payers due to the same problem. The study by Ahuja and others* shows that only 45.7 per cent of the recepients of loans for the purpose (dairying) were left with the assets at the end of two years: the others had either sold it or the animals were dead. In case of sheep and goats the mortality rate was very high—42 per cent in a single year. Diseases, inclement weather, lack of proper shelter and veterinary attention, etc. were the main factors responsible for high mortality rates.

*IRDP, an evaluation, Jaipur Institute of Development Studies, 1984

In the developed and irrigated taluk of Bardoli (Gujarat) nearly 22 per cent of the beneficiaries were without their assets at the end of 2 years. For successful operation of dairy industry, sufficient supply of good quality milch cattle is essential. According to NABARD findings, except in Punjab, Haryana, U.P and Gujarat, milch cattle supplied were of relatively poor quality as the animals of better breed and yield were not available in such a large number.

A well integrated rural development programme expands output and develops skill on the principle, 'what market can absorb' In the absence of quick modes of transportation and lack of mobility, production should be according to demand. Larger milk or poultry products without proper outlets may not yield the desired results. A cluster approach in this respect is necessary, but this has not always been adhered to. Under the TRYSEM, while providing training to large number of beneficiaries the principle of 'what market can absorb' is seldom followed.

Overlapping programmes !

The desired results of rural development programmes are not available due to multiplicity of programmes, overlapping, and unitegrated approach of agencies handling these schemes. SFDA was merged into IRDP at the time of its inception, but another programme SMFP (Small and Marginal Farmer Programme) was again introduced in 1983-84. While NREP is going on, a new programme RLEGP (Rural Landless Employment Guarantee Programme) was launched in 1983-84

In the target-oriented rural development programmes the interest of government agencies is retained upto the level of grounding of the scheme. In case of IRDP, the DRDA or block agency remains in picture upto the time assets are handed over to the beneficiary without having any follow-up measures. After grounding the bankers are only interested party and that is only in connection of loan recovery. Schemes under NREP are not at all integrated with the schemes under IRDP or TRYSEM. In the words of Indira Hiraway* "It seems that the major weak link in the rural development planning is the absence of total approach at the strategy level."

*Economic and Political Weekly, March 30, 1985.

Lack of support

Apart from unintegrated approach of rural development, the strategy of supporting 'poorest from the poors', in the first phase of IRDP, has been wrong. The surveys which examine incremental income effects of IRDP indicate that it is poorest of the poors, the landless agricultural labourers who, as a group, have faced the worst. As the programme provides a single input (in most of the cases), in the absence of supportive inputs or services and infrastructure facilities, the poorest of the poors are unable to maintain these assets properly. According to Ahuja and others, in a case study of livestock beneficiaries in Jaipur district, while 45.7 per cent of the recipients of loan for the purpose were left with the assets at the end of 2 years, in case of agricultural labourers this percentage was only 34. In case of mortality rate in sheep and goats the landless labourers were the worst off. Jain S. C.* studying the impact of IRDP in the two taluks of Gujarat found that it was middle income recipients among the poors who gained, the poorest could not, instead their number swelled. The NABARD study, while examining the reason of poor performance of the livestock activity under IRDP, pointed the "Inadequate availability of green and dry fodder, particularly to landless, who were the main receivers of the milch cattle."

The problem of recovery of loans is more acute in the group of 'poorest of the poors' as in the absence of their own assets no legal action can be taken against them in case of a default. Study by Muthayya B. C. and Hemalatha Prasad (Journal of Rural Development, Vol. 3. NIRD Hyderabad) revealed that the largest number of defaulters (46.8 per cent) were in case of animal husbandry—the most common enterprise among landless labourers and marginal farmers. In case of Pahari block, Mirzapur district (U.P.), the recovery percentage was as poor as 5 per cent. If larger extent of credit, converts into 'bad loans', the banks, which run on commercial principle, may lose confidence in IRDP, jeopardising the whole programme of rural development.

No following up

The strategy of gradual expansion of the IRD programme on specialization basis would have yielded more as compared to the present strategy of hurried universalization. The programme was introduced in 1979-80 beginning with 2300 blocks with the addition of 300 blocks in 1979-80. The coverage of the programme was roughly doubled on October 2, 1980 when all the 5100 blocks were covered under the programme. Considering the vast area and scattered villages, the programme requires a massive administrative infrastructure and expertise in project formulation, implementation, monitoring and evaluation. The present administrative machinery is unable to cope with the programme on national basis. Due to this constraint the programme has become target-oriented without any follow-up measures and evaluation worth mentioning.

The availability of good quality inputs and proper marketing facilities are other constraints emerging due to universalization of IRDP. On the basis of number of beneficaries in dairy industry N. Rath estimated a requirement of 5 million milch cattle in 5 years, i.e., at the rate of 1 million every year spread over 5,000 blocks in the country.

In the absence of availability of good bread animals, beneficiaries are forced to purchase whatever is available in the market, at whatever prices.

The Seventh Plan has been estimated to start with around 250 million persons in the rural areas below poverty line (the number was 259.5 million in the pre-Sixth Plan year). In spite of the dismal performance of the Sixth Plan in the field of alleviation of rural poverty, no shift in the policy is seen in the Approach Paper to the Seventh Plan which supports "endowment of income-generating assets on those who have little or none of these, to be the core of anti-poverty programmes" and recommends to continue these programmes at an accelerated pace in the Seventh Plan!

Some suggestions :

For achieving better results from poverty alleviation programmes the following line of action is suggested :

1. In the endowment-based programmes, instead of starting from the bottom deciles of the rural poor, we should start from the viable group of the poor who has a capibility to retain, manage and replace the assets provided Once the programme is successful in this group lower deciles of poor population should be covered. In this first phase, the bottom decile of poor should not be left uncared—it should be covered by wage-employment schemes like NREP.

2. As far as possible the multiplicity of the programmes, which may lead to overlapping, must be avoided. A proper integration and coordination in different schemes, specially between IRDP, NREP and TRYSEM is necessary. Under NREP instead of 'stereo-typed earth excavation works' mainly relating to kachcha village roads, the selection of the schemes should be on the basis of provision of infrastructure under IRDP beneficiaries.

3. IRDP should be organised on selective and specialization basis only in areas where some infrastructure facilities are available. Once the programme is successful in these areas, it should be extended to other areas.

(*continued on page* 14)

*Impact Study of IRDP, Uchchal and Bardoli Taluks, District Surat, Gujarat, South Gujarat University, 1984.

Why multiplicity in rural development efforts?

M.S.A. Rao

The author, in this article, points out multiplicity of poverty alleviation programmes and expresses the hope that the Seventh Plan would seek to coordinate and consolidate such programmes to remove confusion. He laments that the approach to the Seventh Plan blindly follows the line of intensification of earlier programmes with all their mistakes and ever increasing confusion. He tries to discuss the necessity of developing a sense of direction in the Seventh Plan in respect of various rural development programmes.

ALTHOUGH RURAL DEVELOPMENT PROGRAMMES have acquired a high degree of permanence in the plan documents, their content and focus have varied from plan to plan. For instance, the change from the concept of community to rural development was a marked one in so far as it recognized that Indian village communities represent a diversity and often conflicting interests. It was realized that programmes of agricultural development helped the landowning group of the village and alienated the landless groups. The benefits accruing from such programmes only widened the gap of inequality and brought the conflicting relations to the fore.

These ad-hoc programmes!

With a view to correcting some of the mistakes, many programmes were launched for the benefit of the rural poor—the landless labourers. It was also realized that the problems of tribal development were different from those of rural development. Hence a separate programme for Tribal Development came into existence. All these reflect a further elaboration in the identification of specific problems concerning different sections of 'rural population' and developing appropriate programmes in order to fulfil the needs of specific groups. This has resulted in a multiplicity of diverse, heterogenous, small-scale but *ad-hoc* programmes.

A third phase in the thinking behind planning was to administer a package programme for a certain section of rural population or for the whole community, which resulted in integrated development programmes, such as the Integrated Rural Development Programme, Integrated Tribal Development Programme and the Integrated Child Development Services.

A fourth trend in the thinking process in planning was the identification of the major problem of the

development in terms of poverty which resulted in many programmes centred round alleviation of poverty. An added dimension, to cap the programmes of rural development, was the formulation of the twenty point programme and the minimum needs programme many of which had a bearing on rural development.

Need for co-ordination

Thus a good deal of careful thinking has gone into the formulation of the policies and programmes of rural development since Independence. Nevertheless, if the logic of the planning process so far has followed the direction of diversification of programmes oriented towards the needs of specific groups, it is reasonable to expect that the Seventh Plan would think of coordination and consolidation in order to remove the confusion arising out of a multiplicity of programmes and agencies, through the process of funnelling diverse programmes originating in different ministries into a single strand, with a team of a few trained workers, for a cluster of villages with mobile servicing units This is also the time to look back on its rich experience with a view to learning from the mistakes committed earlier. However, the Seventh Plan approach document does not give any indication of this process of a healthy logical development in planning. It does not either give any direction to the programmes of rural development or principle of coordination of diverse programmes Neither does it attempt to identify new needs of vulnerable groups. On the contrary the approach paper blindly follows the line of intensification of the earlier programmes with all their mistakes and ever increasing confusion. An attempt is made in this paper to discuss the necessity of developing a sense of direction in the seventh plan in respect of diverse rural development programmes.

The various programmes

It is necessary to identify three types of programmes: those which cater to the needs of the village community and area development as a whole ; those serving the interests of the landowning class ; and those satisfying the requirements of the landless agricultural labourers and artisans.

The programmes which serve the needs of the village community and contribute to the area development as a whole are : rural electrification, health care facilities (rural health), elementary and adult education, Accelerated Rural Water Supply (safe drinking water), building of roads, environmental sanitation, rural energy systems, and Integrated Child Development Services. The IRDP covers animal husbandry, dairying and fishery development which include different sections of rural population. At the level of policies and programmes, these are sufficient measures to bring about village and area development as a whole.

The real question, however, is to what extent have they been implemented successfully and which sections of rural population have been benefited most by these programmes. It is well known that roads, electrification and others have benefited more the landowners and cultivators. They have installed electric pumps and lighted their streets and homes. They have been able to grow more food and transport their produce more easily and quickly to the market. These measures then provide the infrastructure for those who have the capacity to use them for their benefits It is also true that the streets and surroundings of the upper castes and class in the villages are cleaner, thanks to environmental sanitation programmes, than the streets and surroundings of the scheduled castes and agricultural labourers.

Benefiting the rural rich !

While there is a differential utilization of the general facilities in favour of the upper castes|class, there are specific programmes which are meant to benefit those who either own or cultivate land. It is no doubt understandable that from the very beginning the emphasis has been on growing more food and development of agriculture, and the target group for this programme is the owner-cultivators Land reforms irrigational schemes, machanization of agricultural operations, improved seeds, fertilizers, pesticides cooperative societies for credit, fertilizers, milk and consumer commodities, banking, storage and marketing facilities provided basic inputs for increased agricultural production. Area development scheme was introduced in the irrigation area projects. The package programmes and intensive agricultural development programmes in the areas where irrigation facilities were available, paved the way for green revolution in several parts of India and the consequent self-sufficiency in food in relation to the growing population size.

Within the larger category of landowner-cultivators a section of small farmers was identified for further development. Similarly the areas where droughts frequently occurred, were selected for improvement Hence the Small Farmers Development Agency (SFDA) Marginal Farmers and Agricultural Labourers (MFAL) and Drought Prone Area Programmes (DPAP) came into being

It is necessary to note that there is a continuum rather than a dichotomy of classes in agrarian relations The small farmers have their own specific problems and in a country where the average size of landholding is very small, it is unrealistic to treat the small and marginal farmers as owners of means of production or the 'Haves'. Programmes of development oriented towards this category of farmers is no doubt a welcome measures. Similarly the village and small-scale industries programme is welcome as it improves the skills of artisans and helps encourage self-employment.

Depriving the lowliest

The most vulnerable group in the rural community, however, is the scheduled castes who constitute the bulk of the landless agricultural labourers. Although the scheduled castes get preferential treatment under the Constitution, in the fields of education, government jobs and political representation, they have been a source of exploitation in the agrarian relations. Since the 1970s many programmes have been formulated to alleviate their condition of poverty. Poverty and exploitation became the foci around which many programmes revolved. Some of these programmes may be mentioned here : The poverty alleviation programmes include creation of employment opportunities, Rural Landless Employment Guarantee Programmes (RLEGP), National Rural Employment Programme (NREP), Food For Work Programme (FFWP), Employment Guarantee Scheme (EGS) in Maharashtra, Minimum Wages Act for Agricultural Labourers (MWAAL) and Skill Development Programme. All these programmes cater to the employment needs and improvement in the conditions of work of agricultural labourers and artisans who generally have work for about six months in a year.

Employment is only one of the basic components in the alleviation of poverty. Other programmes such as the Minimum Need Programme and many of the Twenty Point Programme centre round the areas of health, housing, education and nutrition. Lastly, since conditions of economic exploitation still exist in the form of bonded labour system, abolition and rehabilitation of bonded labourers became the focus of attention in the Twenty Point Programme. For some time the *antyodaya* programme concentrated on the uplift of the down-trodden. Thus it looks as though all the problem areas of this vulnerable group have been identified and policy measures suggested. However, there is a wide gap between policy and implementation, because the programmes do not reach the groups for which they are intended to.

Bureaucratic approach, a hurdle

The administrative machinery that is needed to implement the programmes and policies tends to grow both in size and complexity at various levels. More and more specialists and auxiliary personnel are recruited. Each worker at the village level is in charge of implementing specific programmes such as nutrition, immunization and health, education, employment needs and housing. This has resulted in the multiplicity of workers who come to the village for some time in the day and go away to nearby towns or big villages where they would be residing. Villagers are perplexed as to what to expect of them. For instance, when a girl worker comes to administer the nutrition programme to the village under ICDS, the poor agricultural labourers say 'our problem is food and job and not nutrition'. She says 'it is not my job ; it belongs to Ministry of Rural Development'. This is a natural problem of bureaucratic expansion and specialization. Hence, there is an urgent need to develop coordination, team work and communication among the multiplicity of workers. There is a need for a coordinator, a person who is knowledgeable of different programmes and agencies and resides in the village. More than one person need to be involved both at the stage of formulation and implementation of a particular programme.

Coordination of programmes, a must

Another source of confusion in the implementation of diverse programmes is that each one of them stems from different ministries. There is competition among different ministries to develop, administer their own programmes and complete their targets so that they may get credit and more allocation of funds subsequently. But what happens to the villagers ? This is a secondary consideration although all the programmes are meant to reach the same people. In order to avoid duplication, wastage and confusion (for the people in the village) it is necessary to coordinate diverse programmes at the level of the block. Below the block level the programmes need to be implemented as a package treating the household of different sections of the population as the unit instead of the individual as the unit of development. The worker at the village level should belong to the Block and not to any particular ministry.

Reducing multiplicity

In the light of the foregoing observations, it becomes imperative that the Seventh Plan approach document gives a serious thought to coordination of the activities of multiple functionaries at the village level and minimize inter-ministerial competition and conflict. Since implementation is more important than policy formulation, I suggest that the Programme Evaluation Organisation might take on a more responsible function of monitoring the implementation of the programmes at different levels rather than merely sitting in judgement over the working of the programme. The evaluation work is better done by non-government research institutions.

Secondly, the search for identifying more specific needs of vulnerable people should go on. For instance, the *anganwadi* of ICDS which works only for a few hours in the day does not answer the needs of the agricultural labourers' households where both husband and wife go out to work. There is a dire need for day-care centres to take care of the children of the landless agricultural labourers. The day-care centres may be the service-centre for carrying out programmes of education, nutrition, health care facilities and family welfare. Many studies have shown that the landless agricultural labourers as a category in the village has higher fertility and infant mortality rates, higher incidence of disease, illiteracy, undernutrition and unemployment. Hence the importance

of day-care centres as the nucleus of providing services to the landless agricultural labourers.

Avoid ad hocism

Thirdly, ad hocism in development programmes should be avoided. There is no need to play gimmicks now under conditions of political stability of the ruling party. Planning means anticipating the consequences and providing the remedies beforehand. For instance, when running water is provided to a village, water collects near the public taps and the cesspool becomes the breeding ground for mosquitoes It is *commonsence* that along with the provision of running water should also drainage by compulsory.

Jobs to freed bonded labourers !

Another example is in regard to bonded labourers. It is easier to free them from the bondage, but difficult to rehabilitate them. Unless the freed labourers have a continuous job, they are likely to relapse into the bonded situation once again. The advantage of the bonded labour is that a labourer is assured of two meals a day and he or his family gets a lump sum money in advance which will meet the expenditure on marriage and other life cycle ceremonies. The administraters think that cash loans should be given only to production activity and not for consumption. In the absence of an alternative the labourer feels *secure* in the old system. The price for freedom should not be starvation.

Free and healthy labour, a must

Thus while the rural development programmes have achieved some results in giving a boost to agricultural production in which landowners are the target group, the landless agricultural labourers are still to reap the benefits of the programmes meant for their uplift. The Seventh Plan should concentrate on the effective implementation of the programmes that are specifically meant to alleviate poverty, to lift them from a position of subordination and check exploitative tendencies in agrarian relations Since labour power is an integral part of production organization, creation of a free and healthy labour should be the main emphasis of the Seventh Plant in the area of rural development. □

(continued from page 7)

birth to, lately in the world's so-called "advanced" sector, Will Karnataka, the land of beauty, culture, wisdom and instinct, forge the detonator that can induce the shake up, not down below, for it is in sound health, but above in the imitationist vacuum world of the so-called elite that at best is a floating balloon ? The battle of "Kurukshetra" on the mild soil of Karnataka cannot be long or harsh, much less be catastrophic.

Happiest of auguries, the young Prime Minister o today announced on the eve of August 15, th strengthening of Panchayat Raj throughout the coun try: The Mahatma, wherever. He is will have a sens of joy over his younger namesake. Congratulation to Karnataka, also to the 'people' !

(continued from page 10)

4. Rural development programmes should be do vetailed with the cooperative structure available ir the area. Cooperative set-up should help in provi sion of necessary inputs and marketing facilities fo IRDP beneficiaries.

5. The programmes should not remain only target oriented, larger amount of funds should be devotec for monitoring and evaluation

Working on these liens, better results of rural de velopment programmes and poverty all eviation ma be available.

Exports to be up in 1985-86

THE MAJOR EXPORT items which fetched con siderable amount of foregin exchange during the las three years are : gems and jewellary, leather an leather manufacturers, ready-made garments, chemi cals and allied products, tea and mate, marine pro ducts, iron ore, cotton fabrics, jute manufacturers metal manufacturers, tobacco (Unmanufactured) coffee, cashew kernels, vegetables and fruits, spices oil cakes, cotton raw, handicrafts, carpets, crude oi and petroleum products.

The export prospects of individual commodities c products depend on various international and dome tic factors. The items whose exports are expected t be higher during 1985-86 than the last three yea include cashew kernels. oil cakes; spices; processe foods; marine products; iron ore; leather and leath manufactures; cotton fabrics; ready made garment chemicals and allied products; engineering goods an handicrafts □

Higher subsidy to weavers

THE TOTAL AMOUNT given as subsidy o janata cloth to various States during 1983-84 an 1984-85 was Rs. 47.24 crore and 58.28 crore respe tively. However, the rate of subsidy was increase to Rs. 2 per square metre with effect from Octob 1, 1984. Earlier it was Rs 1.50 per square metre wit effect from July 1, 1981.

The subsidy was enhanced with effect from Oct ber 1, 1984 in view of the increase in the cost of ir puts and wages. □

3

Loopholes inflicting IRDP !

Yojana Correspondent

AN EVALUATION STUDY on Integrated Rural evelopment Programme conducted by the Programe Evaluation Organisation of the Planning Comission has revealed a number of loopholes in the rmulation and implementation of the IRDP During 983-84, when the study was undertaken, there was o uniform organisational set up at the State headuarters for the administration and execution of the RDP. Besides, there were structural weaknesses in e administrative set up at the district and block vels which came in the way of administering the proammes. Another handicap pointed out in the report lates to frequent transfers of key officials, especially roject officers, incharge of District Rural Developent Agencies (DRDAs) which greatly impaired effiency and effectiveness of the administrative set up the district level Besides, the extent of trained ersonnel available with the DRDAs was most inadeuate. Added to this, there was lack of horizontal oordination necessary for proper implementation of e programme at the ground level

Yet another major deficiency related to selection f the target families. As against the official guidenes that selection of the target families for IRDP e necessarily made in the open meetings of the Gram abha (Village assemblies), the data collected for e study indicates that only about 26 per cent of e total sample households were selected in the open ram Sabha meetings. About 74 per cent of the eneficiaries were selected by Block Development fficer|officials and village level workers thus revealg that more deserving households were not selected r assistance under IRDP Some other shortcomings the implementation of the IRDP related to lack f awareness among the rural poor|beneficiaries about e various schemes and time lag between sanction nd delivery of benefit assets

The study report further pointed out lacunae in ecovery of loans by the financial institutions from the beneficiaries on account of the fact that returns from schemes were not adequate, and income realised was spent for unforeseen purposes like marriages, illness, death, etc.

Coverage of sample households

The study covers 1170 households against the envisaged sample of 2640 beneficiary families. It covers 55 per cent of the envisaged size from the primary sector, 18 per cent from the secondary sector and 37 per cent from the tertiary sector The 1170 selected beneficiaries came from 132 clusters|villages from 16 selected states, 33 districts and 66 blocks representing tribal areas, hill areas, agriculturally developed areas, agriculturally less developed areas (rainfed), desert areas, areas with good administrative structure for local level planning and implementation and areas with poor infrastructure for local level planning and implementation The 16 States covered in the report are Andhra Pradesh, Bihar, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

Major findings

The evaluation report reveals that about 88 per cent of the 1163 households reported that as a result of their coverage under IRDP, their income increased, while 10.6 per cent felt that there was no material change About 37 per cent of the total reporting sample households were of the view that there was some increase in their family assets after their coverage under IRDP. However, about 63 per cent of them reported that there was no increase in their family assets position. Again, about 77 per cent of the selected households reported that consumption level increased under IRDP benefits. But 23 per cent of the households, however, felt there

was no change in their consumption level. A significant majority of the total households (about 64 per cent) also felt their overall status in the village society was elevated following the coverage under IRDP. About 36 per cent did not notice any change in this regard.

The study covers administrative and organisational structure at the State, district and block levels and an appraisal of the planning process and implementation of the programme, socio-economic profile of the sample beneficiary households, nature and type of the benefit schemes provided to them and the economic impact of the programme on the selected beneficiaries.

Impact

The impact of the IRDP in terms of employment, income level, asset formation, consumption level, social status revealed that nearly 90 per cent of the 1170 beneficiaries reported that they had benefited from the programme, about 9.5 per cent felt that they were not benefited and the remaining about 1 per cent did not express any views As to the more specific impressions of the beneficiaries in this regard 7 out of the 1170 selected beneficiary households could not answer the questions especially. Of the remaining 1163 households, 90 7 per cent expressed the view that following their coverage under IRDP their family employment increased Another 8 9 per cent reported there was no change in their employment position due to IRDP.

Recommendations

The study report suggests that it may be desirable to have a high level committee which may go into the whole question of strengthening unification of the administrative structure at various levels and examine all the relevant aspects and recommend an organisational structure adequate for effective implementation of IRDP programme hereafter.

It has also been recommended in the field study report that to ensure more effective utilisation of the limited resources available for traditional infrastructural development, the possibility of pooling together and consolidating the funds available to the sectoral departments and funds allocated to DRDA may be considered so that horizontal coordinated action could be taken for the creation of required infrastructure.

It has further recommended that in future the physical target for coverage of beneficiaries under IRDP should be fixed with due consideration to the level of development and economic conditions prevailing in different areas.

Another recommendation calls for involvement of village assemblies for selection of more deserving beneficiary households for assistance under IRDP.

The evaluation report has further recommended that States should cover the maximum possible number of IRDP beneficiaries under the tertiary and secondary sector schemes and also under subsidiary occupations. The animal husbandry schemes should be provided only in areas where basic infrastructure facilities including marketing support are available.

The report calls for a comprehensive review of the viability of the ongoing schemes specific to the areas including their integration with the local level plans of the district and the blocks to make them more suitable for catering to the needs and conditions of different areas This is necessary to ensure that schemes devised are area-specific and for enhancing the productivity and returns from the investments undertaken for the purpose.

It has been recommended to take steps to strengthen and to streamline the monitoring arrangements at the State, district and block levels It suggests that on the pattern of Gujarat and Rajasthan other states should take follow-up action in regard to the verification of assets and for studying the impact of the programme in terms of the resultant increase in the income of the beneficiaries.

Target covered

Of the targets covered in the sample households 12 per cent were headed by women. The coverage of Scheduled Castes and Scheduled Tribes families in the aggregate was slightly more than 40 per cent of the total number of sample families as against the recommendation of at least 30 per cent in the Union Agriculture and Rural Development Ministry's guidelines. Nearly 40 per cent of the beneficiaries households were cultivators or small and marginal farmers

The evaluation study of IRDP was undertaken by the PEO of the Planning Commission at the instance of the Union Ministry of Agriculture and Rural Development as part of its work programme for 1983-84 □

Subsidy in foodgrains to continue

THE PROVISION FOR food subsidy made in the Budget of the Department of Food during the current year is Rs. 1,100 crore. The budget provisions for food subsidy in 1982-83, 1983-84 and 1984-85 were Rs. 710.00 crore, 835 00 crore and 1,100.00 crore respectively.

It was difficult to anticipate the variation in the amount of subsidy during the next three years, as the amount would depend on many factors e.g. quantum of off-take, rate of various taxes, rail and road freight, rate of landing charges in case of imports, storage charges, administrative over-heads, handling expenses, support and the issue price notified by the Government etc. The average subsidy from 1969-70 to 1984-85 was Rs 443.12 crore per year

4

A recipe for poverty alleviation

Dr. Ram Krishan

The author enumerates lacunae in block level planning in terms of rigid budgetary pattern, staff-oriented schemes, unsuitable and unwilling staff, improper land utilisation planning, neglect of basic problems at the grassroots levels, poor infrastructural backing, lack of reviews and rampant corruption. These, he says, have nullified effects of development process in villages. If removal of poverty is to be achieved, then, he feels, all efforts will have to be made to create wide based employment to increase the purchasing power of the rural poor and by producing goods of mass consumption economically. Any thing short of these would only stabilise rural poverty, the author adds.

IMBALANCES IN GROWTH of various areas and groups of people are signs of defective planning and implementation on the part of the policy makers and implementors of programmes. These defects have to be spotted out and removed. Besides lack of spatial planning mentioned in part I of this article as an important lacunae in block level planning which could not receive adequate attention so far, there are various other lacunae worth mentioning, which are responsible for luke warm achievement of rural development programmes in the blocks.

Rigid budget pattern

The present tendency is to prescribe only one type of budget pattern for the entire State or the Country. This is one of the important reasons of failure of block level planning as conditions and programmes differ from area to area. Flexible budgets with power to make alterations to suit local situations are a must for successful planning and implementation. If block level planning is to succeed, the Government of India would have to allot consolidated funds for all blocks to the State and the State in turn to the districts and districts to the blocks to be spent according to schemes|programmes needed by the people for the concerned areas. The block plans would, however, have to be thoroughly scrutinized by the district|regional and State levels by each department concerned before they are finalised. The budget provisions would have to be made only according to the need of the area.

Remote decisions

In the present state of planning the decision taking is in remote hands leading to abnormal delays. Once the plan is finalised through mutual discussions the subsequent decisions should be taken at the block| district levels. The programmes generally fail due to abnormal delays in taking decisions which are generally in the hands of a large number of bureaucratic cadres very often not conversant with the local situation and are taken sitting far away from the implementing site.

It has been seen that plans generally prepared through consultants or bureaucratic machinery, though accepted and approved for implementation, do not carry with them the necessary administrative and financial sanction. This means abnormal delays in implementation. Delays mean rise in cost and when cost rise, vicious circle of reapproval or reappraisal starts. This exhausts the patience and faith of the implementrs and the people and makes Parkinson's third law i.e. "delay is the deadliest form of denial" appears to be true.

New plans when prepared and implemented would always require adjustments and changes during the course of implementation. Such changes are not permitted to be made locally as they require sanction from higher levels. It means abnormal delays which

dampen the spirit and faith of the staff and the people in the plan.

Staff-oriented schemes

While preparing schemes, there is more stress on staff schemes rather than people's participation and creation of infrastructure for continued development This results in failures of programmes which in the beginning appear to be clicking but as time passes, lack of proper infrastructure itself necessary for expansion and continuity of the programme acts as a limiting factor for expansion. More the staff, less the work and greater the administrative and personnel problems. This keeps the seniors mainly busy in solving and looking after administrative complications and complexities resulting due to rivalries, indiscipline and political interference.

Unsuitable and unwilling staff

Recruitment of staff has a city bias. The result as that most of the staff do not want to go to live in rural areas. Such persons always try to be posted to a town or city. If their wish is not fulfilled, they grumble, do not work willingly and do not give their best. So much so, that more than ninety per cent visitors of ministers, secretaries and Heads of Departments comprise transfer seekers. The people's representatives instead of serving the people, utilise their major time in serving the interest of transfer seekers in complaining against bureaucratic cadres or in trying to protect them through questionable means

Non-synchronization

There is no proper synchronization of plan objectives with programmes. The Sixth Five Year Plan of the Government of India envisaged the following principles objectives of planning to be achieved:

(i) the removal of unemployment and under employment.

(ii) an appreciable rise in the standard of living of the poorest sections of the population;

(iii) provision by the State of some of the basic needs of the people in these income groups, like clean drinking water, adult literacy, elementary education, health care, rural roads, rural housing for the weaker sections and minimum services for the urban slums.

These primary objectives were to be attained through achieving a higher rate of growth of the economy than in the past, moving towards a significant reduction in the present disparities of incomes and wealth and ensuring country's continued progress towards self-reliance.

If one goes through the plan in detail, one would find that nowhere these objectives are precisely dovetailed or co-related with programmes. Even in the evaluation studies of the past plans carried out by various agencies, there are no specific details as to how far the principal objectives have been fulfilled. The evaluation studies should make it a point to study, besides the achievements against programme targets, as to what extent, the given principal objectives have been fulfilled.

No land utilization planning

Most of the agricultural plans do not aim at a scientific land utilisation. It is necessary, first to spell out the objectives of land utilisation plan and then chalk out programmes and fix their targets to achieve these objectives. Changes in land utilisation pattern have to be decided keeping the local resources, State's and national policies in view.

Neglect of basic problems

Some of the important basic problems for rural areas are the problems of fuel, cattle and labour. There are no clear cut policies about these. These factors, therefore, do not find a place in the block plans being prepared at present. The policies and programmes about them affect the lives of the people to a great extent and, therefore, should be spelt out in these plans. One example may be as to how efficiency of the agricultural labour could be improved with a view to yielding them more income. Another could be as to what would be the fuel policy of the area Controversies about cow and buffaloe milk and their prices need to be settled Forests play a great part in the lives of the people. What should be the relationship between forests and the people of the area and how forest products could be harnessed for increasing the resources and income of the people also needs due consideration.

Neglect of cottage industries

In block level planning, creation of new employment opportunities in the area through schemes having a wide base and coverage has to be given the greatest importance. Starting a factory or two would not solve the employment problem of the people in general Examples of such large scale employment-providing shcemes are already seen in our country here and there. These are (1) Utensil making in Moradabad, (2) Shoe making in Agra, (3) Carpet making in Mirzapur, (4) Sari making in Varanasi (5) Lock making in Aligarh. More of such schemes could be thought of. Rural housing could be one such scheme which could provide large scale opportunities for various categories of people right from simple labour to technicians and specialists and lead to initiation of several rural industries including manufacture of building requisities. Village housing colonies, like housing colonies in the cities, have to be developed through people participation and efforts with Governmental help. These colonies have to be simple in design, cheap to moderate in cost, and with a look of modernity.

Non-utilization of existing talent

Many a time some castes or groups specialise in certain professions. For example, pig breeding is generally carried out by Harijans and even among Haripans by certain groups only. Same is the situation regarding the business of Sari making in Varanasi. Castewise and professionwise surveys would reveal all such peculiarities and combinations. Such specialised groups would require only a little training and capital to purchase some new modern production requisites to improve their skills and efficiencies and consequently their incomes. The plan should give details of improvements needed in all the existing professions. In other words, improvement in existing state of technology is more beneficial than to start from scratch.

Most of the industrial plans are generally based on developing new entrepreneurships rather than bettering the existing. If existing skills are improved, migration of rural people to urban areas would be greatly reduced.

Poor infrastructural backing

Many a time, the success of block plan depends upon the health of institutions located outside or inside the block. If they are defunct or running in loss, planning for that institution in the block is jeopardised. In such a situation, target of supplies and loaning are not fulfilled due to poor financial condition, poor management, corruption, and vested interests in the institutions concerned. Implementation suffers in such cases. In the absence of alternative institutions, continuity and expansion of programme suffer. Example of I.A.D.P. Aligarh could be sighted in this respect. While loaning in I.A.D.P. Ludhiana (Punjab) progressed over a period of 10 years from less than a crore of rupees to 7 to 8 crore rupees a year, in Aligarh it centered round much less than a crore of rupees every year due to mismanagement, corruption and poor financial condition of the district bank. The fate of I.A.D.P. Aligarh in case of fertilizer consumption and consequently output per hectare would have been different if the District Cooperative Bank of Aligarh would have behaved the Ludhiana way

Policies not commensurate with actual needs

Area planning has to be more specific as against State level planning which is too general and is not compatible with the actual area requirements as it does not fit in all the situations. Hence, for a successful area plan and its implementation, state policies concerning budget expenditure control, decision making and administrative control have to be flexible. Failure would cast its shadow sooner or later if the State policies remained rigid, and made uniformly applicable to the entire State having divergent areas and people.

Every area or village or group of people have some problems which constantly bother them. These problems or felt needs as they may be called need to be solved or tackled first to ensure their participation. These felt needs are generally those which hamper the growth of the area or the people. Common examples of such felt needs are protection against recurring floods, removal of waterlogging, damage by wild animals, inadequacy of infrastructure such as absence of road, bridges, etc. Unless recurring losses due to natural causes were checked or reduced, other programmes would not click as the people engrossed in their immediate need would hardly be in a position to participate in the plans.

Lack of reviews

Review of the programmes generally do not take into account degree of acceptance of the programmes by various socio-economic groups of the people and if certain groups of people or individuals are not accepting them, reasons of non-acceptance need to be analysed and remedial steps taken accordingly. Collection of reactions of the people about the plans, adoption percentages of different programmes and constraints modifications needed in the content of the programme and implementation technique are things which are essential in any planning and implementation process.

Unchecked population growth

As population increases, benefit of growth process gets diluted unless the growth rate of the programme in question is higher than the population growth rate. Hence, it is necessary to include in the block plans, schemes for stabilizing population.

Rampant corruption

Rampant corruption in bureaucratic cadres and institutions is one of the most important factors nullifying the effects of development processes. Although reducing corruption cannot be a part of a block plan, yet truth is to be faced. Corruption in purchase of cattle, implements and machinery for loaning by banks and cooperatives, distribution of subsidies, etc. are reducing the profitability of programmes and projects and many a time result in their failures.

Removal of poverty, unemployment and under-employment, raising the income of the rural people and removal of area and socio-economic imbalances in the rural areas have to be as usual, the main aim of block planning. In order that it succeeds the lacunae pointed out above have to be given serious consideration. Besides, it would also call for a massive transfer of resources to rural development, multi-sectoral approach to problems and multi-level spatial planning, use of new appropriate technologies under a programme for creating wide based employment for generating purchasing power and producing mass consumption goods economically. Anything short of these would only, standardize and stabilize rural poverty. □

(Concluded)

Dedicated administrative support to IRDP, a must!

Ajay Kumar Singh

According to a study made by the author, implementation of IRDP suffers from indifferent attitude of administrative personnel. He feels unless and until the rural development programmes are promoted by a motivated team of functionaries with high morale, they will always bypass the poor in spite of the best intentions of the planners. The study brings out interesting facts about the manner in which the programme is being carried out.

FROM THE VERY beginning of the planning system, rural development has relied heavily for its success on the effectiveness of the administrative system. The major concern of academicians and research institutions has been to study organisational and administrative issues in the implementation of rural development programmes. The government has structured and restructured the existing administrative system to fulfil the necessary demands of the programmes.

Recently, on the basis of a study conducted by the Planning Commission, it was concluded that almost all the project agencies implementing Small Farmer Development Programmes were facing administrative and operational difficulties. The inadequacies of extension staff had been a major handicap in effective implementation of the programme of the Agencies, and in several project areas the block level staff were overburdened with numerous duties and therefore found it difficult to devote the required attention to the Agency's programmes.

IRDP is a new innovation in the development strategy of the rural sector. It is supposed to be an effective programme in tackling poverty in the rural sector because it attempts to rectify the deficiencies of SFDA and MFAL. The sole aims and objectives of the IRD programme is to raise family incomes above the "poverty line" by creating substantial additional employment opportunities The target group is the poorest of the rural poor (from all occupational groups, Harijans and STs). The emphasis under IRDP is not on providing any kind of assistance, but on providing substantial assistance to the beneficiaries, which would enable their family income to cross the "poverty line" once and for all.

Objectives of study

This paper discusses the adequacy of the administrative personnel in the implementation of the programme through their performance in the field and see whether any lesson has been learnt from the past experience.

The study was conducted in two randomly selected blocks in Nalanda district of Bihar. It is part of an ICSSR-funded research project which author was assisting. Bihar was selected for two reasons. Firstly, Bihar is a poor state with 57.49 per cent population below the poverty line and, secondly, the success of the antipoverty programme is critical to the development of Bihar.

The two blocks are less endowed in terms of irrigation facilities, infrastructure and local markets. Both are dominated by backward castes (peasantry as well as agricultural labourers). The Harijans are mostly

agricultural labourers. Each block has a tourist centre and attracts a number of tourists during the winter season.

Altogether, 100 beneficiaries from 10 villages were seleted 41 under minor irrigation, 28 under milch cattle, 21 under tertiary (rickshaw & tonga) and 10 under artisans (weavers) Programmes. Out of 100 beneficiaries 37 per cent are Harijans and majority of the rest belong to other backward castes.

Rather than studying the performance of the administrative personnel through their organisations, the response of beneficiaries was examined to determine the efficiency and enthusiasm of the administrative staff. This is more important than the fulfilment of targets.

The working as planned

Under the IRD programme community development block has been accepted as the unit of planning and implementation, and the Agency (DRDA), the main supervisory body at district level, is supposed to effectively support the implementation of the programme. Work at block level is of immense responsibility. Administrators identify genuine beneficiaries and see that the aims and objectives of the programme are fulfilled. They identify the households actually falling below the poverty line (income less than Rs. 3500 per year) and further categorise them into three groups (Rs 1500 or less, 1501—2500 and 2501—3500). Households identified at the lowest rung must be helped first.

The functionaries explain the benefit of the various schemes so that beneficiaries may be motivated to make a suitable choice. Of course, only those schemes which can be implemented successfully in the respective blocks are explained They then ensure that schemes are sanctioned, subsidies are released, and activity begins immediately Links with beneficiaries must be maintained after the schemes start operating so that any problem can be tackled.

Consequently, the necessary support in terms of training inputs, markets, etc must be imparted to the beneficiaries so that their income is raised and they are able to repay the loan easily.

The actual working

The data from our study show that few of the procedures mentioned above were rigorously followed :

(1) None of the programme functionaries enquired about the problems the beneficiaries faced in managing or starting the schemes. Thus the beneficiaries received no support in terms of training, inputs and market, etc. In the selection of beneficiaries our study suggests that 23% of the beneficiaries (mostly for minor irrigation works) had annual income of more than Rs. 3500. Out of 41 beneficiaries who opted for irrigation works, 14 had more than five acres of cultivable land.

(2) 57% of the beneficiaries learnt about the programme from villagers, and 10% through the dealers of diesel pumps. Surprisingly, only 32% came to know about the programme from the village pradhan, VLWs, or bank manager, and a mere 1% from the BDO.

(3) 84% of beneficiaries selected the schemes by themselves without knowing the details of the programmes. Supporting evidence shows that 37% of beneficiaries were unaware of the variety of schemes. Those who did know, referred only to those schemes implemented in their area, like milch cattle, rickshaw, tonga and pumping sets. Only 3% of respondents knew that subsidies were also provided to cobblers, weavers, carpenters, and for small shops.

(4) Our enquiry about the number of times functionaries met beneficiaries before schemes were granted reflects the indifferent attitude of the administrative personnel. VLWs failed to contract 65% of the beneficiaries; BDO could not meet 91% of them, bank employees failed to meet in 81% of cases, and DRDA functionaries never met the beneficiaries in the field at all. (However, two tonga wallas met them at a tourist site)!

24% of beneficiaries learnt of their selection under IRDP from the agents of diesel pumps. When beneficiaries travel to market and meet VLWs or BDO, they receive verbal assurance of getting the work done. Bank employees only talk of loan recovery.

(5) Most beneficiaries stated that selection for a scheme was based on their relationship (perhaps maintained by bribe) with the officials; and this is more acute at DRDA level, from where subsidy money is released Therefore, more time is taken by DRDA office to sanction requests: 70% of beneficiaries were sanctioned subsidies within three months of final selection, 11% within three to six months, and 19% after six months. In some cases two years had been taken to release the subsidy

All 41 respondents getting subsidy under minor irrigation works said that after frequent trips they were told that the subsidy quota for this category was exhausted. The same situation was faced by the weavers; Seven out of 10 narrated the same story. All the 21 tertiary beneficiaries faced problems and out of 28 under milch cattle scheme, 18 had difficulties in getting the subsidy released.

Those who faced problems said that they were forced to please officials. On the other hand the concerned personnel believe that subsidy is the money given to beneficiaries free, so they must have their share in it. This attitude is substantiated by the fact that 23% of beneficiaries had to spend Rs. 50 in receiving help, 13% between Rs. 50 and

(Continued on page 24)

In defence of anti-poverty programmes

Mukul Sanwal

The author strongly defends the poverty eradication programmes like IRDP but feels that some reforms are needed in the periphery. He is of the view that selection of beneficiaries and projects should aim at countering the pull of social institutions and vested interests. He also suggests an action plan for bringing about reforms in the service delivery mechanism.

MUCH HAS RECENTLY been written about the anti-poverty programmes, particularly the IRDP Though the criticisms base themselves on studies of the implementation of the programme, the major objection is conceptual. The subsidy and differential rate of interest have been criticised as charity by those who feel that fundamental changes in the relations of production are a pre-condition for poverty alleviation The asset transfer has also been criticised as wasteful by those who argue that development needs are better served through investment and employment. The structuralists and the neo-classicalis miss the central point, that, extending the scope of the welfare programmes with direct public interventions reflects not only a better understanding of the nature of poverty but also the limitations of sectoral programmes

What anti-poverty programmes seek ?

Anti-poverty programme lay stress on households in special need, and on group processes between them and field level implementers. The infrastructure development and human development programmes stress the provision of goods and services; the creation of physical assets and distribution of services, the use and extension of technology, revenue generation and geographical coverage, project management, organization and supply, capital and management intensive techniques, engineering and coordinations skills; standardized bureaucratic roles with greater responsiveness to citizen participation, the concern is with the general public and designated target groups; the stress is on expenditure monitored in terms of inputs with some concern for outputs As the accompanying table shows the characteristics of anti-poverty programmes are very different.

Meeting needs of the poor !

The needs of poor households are for immediate and personal benefits They live in isolated groups, they require a finer targeting of benefits; they require specific services through multiple programmes for large numbers of beneficiaries over a period of time The anti-poverty programmes are administrative intensive and time extensive They require experimentation, and funds for recurring costs They require to be carried out on an extensive scale if they are to have any impact. Village level committees of implementers and beneficiaries need to take the initiatives, and the decisions for selection of beneficiaries and projects, rather than depend on the disbursing mechanisms of centralised bureaucracies

Reforms that are needed

Anti-poverty programmes require reforms in the periphery. The sectoral reach of infrastructure and human development programmes is limited, particularly in backward areas, because of physical conditions and a different natural resource endowment where the poor are not a part of the economic, social and political mainstream. In areas with common-property resources—fishermen, pastoralists, Tribals and Hills farmers—the primary task is to safeguard traditional rights to the use of the natural resources,

and provide preferential treatment to new rights for bonafide residents of the area and for their bonafide domestic use; regulation for closure or commercial exploitation should be limited to one-fifth of the area or yield, to provide for local use and regeneration—principles in the Forest Manual that need to be revived.

The administrative periphery also requires reform. Hierarchic bereaucracies are unsuited to extend the reach of administration to remote areas and poor households—they are costly, bound by procedures, and thier standardized routines are suited for the general public not for exceptions. Improving delivery of services or disbursing mechanisms will not lead to results in the absence of structural and behavioural changes that accommodate the poor household in decision making.

Selection of beneficiaries

For the success of anti-poverty programmes the transactions at the field-level are the critical ones. The process of selection of beneficiaries and projects has to counter the pull of social institutions as well as the discretion vested in village level bureaucrats and the easier access of the rich. The choice of activity has a high degree of experimentation, as well as the ned for follow-up to ensure permanence of benefits. Monitoring budgetary expenditure, or even disbursal of credit, is not enough since the objective is economic diversification of households, and sustenance

The data from the very field studies which have been used to lable the IRDP as a qualified failure, also shows why some districts are doing better than others .

- Economic incentives (opportunities) are used rather than mere guidance (knowledge).
- Anti-poverty programmes are Administration intensive and time extensive—requiring decentralisation, incentives, training as well as change in design and implementation procedures—Administration at the periphery needs a group of people who are ready to look after the interests of the masses.
- In anti-poverty programmes the beneficiary is selected prior to the determination of the activity, unlike other rural development programmes; the activity—beneficiary sequence, requires relations with the poor rather than direct service, perceiving their needs and extending the out-reach of bureaucracy. New client content procedures are used.
- Socio-economic surveys, rather than targets for moving money are used.

Action plan for better delivery !

The IRDP concept is sound, however, the service delivery or disbursing mechanism needs reform. The following action plan is suggested :

- UNIT : household, to be identified through a socio-economic survey : cards to be given to each member.
- AREA : village, village committee of field implementers (VLW) and all the villagers to select beneficiary and project.
- PROCEDURES : to be simplified, by reducing contact with the bureaucracy, to facilitate direct transfer of resources, and reduce leakages.
- MONITORING AND EVALUATION : field visits for continuing client contact and periodic surveys to verify personal well being rather than geographical coverage.
- FIELD LEVEL WORKERS : training powers and prospects to be improved for increasing commitment.
- ACTIVITY : stress on economic diversification, according to age groups—improving consumption (education, health), income (industry, wages), social security (pension house-sites and houses), and asset transfer (common property resources, land reforms credit, legal aid). Instructions to stress key result areas—adjustment of subsidy at end of three years, assuring wage employment in the lean season, annual review of new entrants for eligibility to various pension schemes, providing access to Basic Needs (education, health, nutrition, family planning) to the card holders, local use of resources (by Tribals etc.) in areas with common property resources (forests fishermen, pastoralists, hill farmers).

Reform should not limit itself to fine tuning the disbursal of credit for the acquisition of productive assets but treat the poor as autonomous production and consumption households and include all the activities of the anti-poverty programme and involve the poor themselves in the decision making process. These steps should reduce the number of poor below the poverty line by half in the next five years.

TABLE 1

Design Strategy for Rural Development Programme

	Mainly infrastructure programmes	Mainly Welfare programmes	Mainly Anti-poverty programmes
	1	2	3
1. Goals	Physical output, construction	Human development, distribution, extension of technology	Social change, redistribution
2. Activities	Expansion of services, buildings, roads, irrigation, rural electrification, housing, drinking water	Health, Education, Nutrition, Family Planning	Economic diversification of households for generating incomes—assets transfer—securing rights in land reforms and common property resources, house-sites and houses, individual economic activities, wage income and minimum Wages, Social security Pension, legal aid
3. Beneficiaries	General Public, mainly in less developed areas	Geographical coverage of target groups of the poor, including women and children	Personal well-being to households in special need—including agricultural labourers, groups in backward regions tribes, women, aged widows and handicapped
4. Constraints	Finance, information	Organisation, supply, access	Social institutions, erosion of traditional rights, lack of opportunities, accountability & motivation of bureaucracy
5. Resources	Capital intensive, Technology, Investment	Management intensive, mill of services, synergy	Labour intensive, local initiatives and organization, appropriate technology, credit subsidy, legal aid
6. Nature of decisions	Pre-programme/project, investment oriented at the regional or State level	Recurrent, maintenance oriented coordination at the district level	Continuous decentralised selection of beneficiaries and projects, sustenance oriented at the village level
7. Formulation	Designing, primarily Engineering	Providing primarily social services	Enabling primarily group processes
8. Implementation	Construction, project	Top-down service delivery	Bottom-up initiatives for use
9. Organisation	Government, supplemented by private	Government supplemented by local representatives	Implementer-client village level committee, p ra professionals, voluntary organisations
10. Evaluation	Input, cost effectiveness, simple, with frequent redesign Short time path for costs and benefits	Output, quantitative changes, complex, with sporadic redesign, long time path for costs, benefits apparent early	Outcomes, qualitative changes, ability to meet changing beneficiary needs extremely complex, irregular redesign, short time path for costs, and benefits to accrue immediately basic changes take time to accrue. □

(*Continued from page* 21)

100, 25% between Rs. 100 and 300, and 30% more than Rs. 300. In some cases, more than Rs. 700 had been spent, certainly by people who do not come under the target group!

(6) After schemes were sanctioned, VLWs did not meet 82% of the beneficiaries, BDO did not contact 87% of them, bank people failed to contact in 45% of cases and, to our amazement, DRDA people never visited beneficiaries! No personnel from any department came to investigate problems beneficiaries might be experiencing.

Conclusion

This study concludes that the implementation of IRDP suffers from the indifferent attitude of the personnel and their improper behaviour. Since the inception of the planning system, policy planners have emphasized the need of forceful and motivated administrative personnel for the effective implementation of rural development programmes. As mentioned earlier, the fulfilment, or otherwise, of targets is not the object of this study, but an assessment of the enthusiasm with which the personnel undertake their job. Thus, if administrative personnel are inadequate in number, they may fail to cover the desired target, but they at least support beneficiaries at a satisfactory level.

However, if beneficiaries are not identified properly, if they are adopted on grounds other than as specified in the manual of IRDP, and if they are deprived of available facilities, then it is not inadequacy in numbers of administrative personnel but their indifference which hampers the implementation of rural development programmes. Traditional weavers of the area had been denied loans, subsidy, raw materials and even market; no beneficiaries under milch cattle scheme got a second buffalo as provided in the programme.

Rural development work is not a simple task, it poses many different problems; pressure of the local rich and politicians, discomfort of staying in village, etc. has been highlighted in many studies. These frustrating problems can only be tackled by forceful and motivated personnel having capacity to manoeuvre and face these challenges. Unless and until the rural development programmes are promoted by a motivated team of functionaries with high morale, they will always bypass the poor in spite of the best intentions of the planners. □

Involving youth in IRDP

R. Bhakther Solomon

Calling for involvement of youth in the formulation and implementation of poverty alleviation programmes, the author suggests restructuring of the Integrated Rural Development Programmes in form, content, policy thrusts and in their style of functioning. Such a thorough change, the author feels, can be brought about by a reformed political order.

MANY OF OUR Rural Development Programmes (RDPs), which are specifically devised for the upliftment of the poor, have contributed to the development of the better-of-sections of the society rather than the weaker sections. It almost looks as if all target-oriented programmes are deliberately being geared by the Programme Implementing Agencies (PIAs) to help the "haves" to acquire more rich at the cost of the "have-notes". Little wonder, therefore, funds meant for RDPs are more often than not mismanaged resulting in perpetuation of poverty, both absolute and relative, in the countryside.

Should we allow this dichotomy to continue? Should we not try to bridge the blatant gap between the declared intention and actual performance? Should we not bring 'structural changes' in the project formulation and implementation so as to make the planned schemes more relevant and beneficial to the poor? These are some of the burning issues before us now. Effective solutions to these alone would bring the poor intended beneficiaries with the project process.

The people at the helm of affairs are of the opinion that our RDPs need no change in their formulation and content. What is wrong, according to them, is not the programme content but the cumbersome "delivery" system which in the long run works against the integration of the poor with the programmes. There are others who hold the view "since the interventions are into an ongoing structural process, their longer term impact, through spill-overs and spin-offs, can be reverse a favourable initial impact".

Restructuring IRDP

This writer does not want to go into the merits and demerits of both the views. Nevertheless, the point that has to be note there is that these divergent views only go to prove that everything is not well with our rural development programmes. RDPs need restructuring in form, content, policy thrusts and in their style of functioning. Such a thorough change can be brought about only by a reformed political order. In the absence of any such reformation in "political order" it is wiser, to look for new models to implement the planned programmes in a better way so as to reach out to the poor circles With this in view an attempt is made here to provide an alternative implementation model for monitoring our RDPs.

Our RDPs operate in an hetrogeneous socio-economic environment. This, in a way, cuts off the real target group from particiapting in RDPs. Further, the nature and content of RDPs is such that the target group is neither able to understand the contents of the RDPs nor the full functioning of RDPs. As a consequence the implementation of the programme is often sluggish or goes off track and eventually the impact of RDPs is very limited on the poor. Therefore efforts should now be made not only to create

an environment for the "easy accessibility" of RDPs with the target group, but also to increase the ability of the project to fulfill its objectives.

This would require as a precondition of the establishment of an in-built "monitoring cell" with the people's full participation to provide the missing link and feed-back channel to all concerned for timely interventions so as to rope in more and more target group in the delivery system. To start with, such a mechanism could be introduced in the economic development programmes and with the passage of time, even social project could also be brought under such a cell.

Who should be the functionaries of this Monitoring Cell? Whether it should exclusively be managed by the bureaucracy or by the "target group" or should it have political representation in it, and|or should it include other development agencies' representatives—answers to these questions could easily be found if there is policy thrust and commitment in this direction. However, what the author would like to stress is that in the event of such a proposition taking shape, at least 50 per cent of the membership of this monitoring cell, should go to the youth from the target group for whom the programme is planned Another important question is how to select a target group and how they should be organised to make use of RDPs? Though our RDPs are clear in their perception of "eligible" group, unfortunately, during the implementation the target group benefit very little from the project Hence one has to first look into the reasons for the gap between the policy and practice

The target groups

In our context, the target group can normally be those who have not so far adequately shared the fruits of development and|or those who have been denied easy access to the development institutions This would mean, assetless labour, marginal and small farmers, the village artisans, marginalised women etc They are identical in their socio-economic setting and in majority of the cases they are also unlettered

In each village, there are hundreds of youth, lettered as well as unlettered, belonging to SC, ST, forward and backward classes without any employment If motivated properly these "trustees" of future India would definitely come forward to assist the Government and other NGOs in their rural development programmes. They are second to none in their quest for an ideal community|society or in their perception of development. They are crucial for any meaningful socio-economic transformation in their respective villages, provided we use them in appropriate forums at the appropriate time. They should be given an opportunity to involve themselves as key factors in our RDPs' implementation.

Involving youth in programme implementation

Therefore the Programme Implementing Agency (PIA) should think in terms of establishing youth (both men and women) Association (YM|WA) in each village to operationalise the programme objectives. The membership eligibility can be decided on a village to village basis, depending upon their educational status, their potentials and their overall merit For ensuring Government involvement, the government development (functionaries from the particular village (like Grama Sevaka) can be associated Ex Officio members in the Committee.

The formation of such a structure would facilitate the PIAs to:

(i) identify easily the most deserving group without any favouritism for a particular scheme,

(ii) develop a time-framework for the implementation of a particular programme, and

(iii) develop an infrastructure at each village to monitor the programme,

(iv) bring the strength and weakness of each programme to the notice of the people concerned

At present this arrangement could be made compulsory for programme implementation and in due course, it can be extended to other stages viz, formulation of proper eligibility criteria, evaluation of the progress of each scheme and suggesting alternative approaches to widen the schemes' impact

UYA can also be mandated to ensure that the identified persons get the necessary funds|advances, facilities from the agencies concerned at the appropriate time. UYAs can also be asked to render the necessary advice during its initial period (by pooling local manpower) to the proposed venture

There should be a clear mandate that unless (UYA) identified and recommends a particular candidate group of candidates for a particular shceme, the PIA would not sanction any grant|or loan This will not only eliminate corruption at the village level but also will ensure that the identified person really falls within the shceme's mandate

The office-bearers UYAs from a particular block panchayat can form themselves into the next tier of implementing channel and it can be called as Block| Panchayat Development Association of Youngsters This Association can look into aspects like whether the targeted amount has been spent within the stipulated time on the group for whom it was meant, whether there is any need to reconsider the broad programme frame-work|eligibility guidelines, whether

(Continued on page 32)

On evaluating poverty eradication programmes

Dr. L.R. Sharma

Monitoring and evaluation of poverty alleviation programmes have been rather difficult tasks. In this context the question is only how many persons crossed the poverty line but how far is the poverty eradication really viable, i.e., whether the persons who crossed the poverty line are able to stay in that position. The author highlights some of the problems which an evaluator faces in monitoring the results of such programmes.

A SIZEABLE LITERATURE has come up in recent years on the question of defining and measuring poverty. In spite of their known drawbacks, the measures of poverty have been extensively used in empirical studies. Efforts have been made with the help of these measures to find out the proportion of population below and above the pre-determined poverty lines in both inter-temporal and inter-regional analysis. In such analysis, although the poverty lines are determined on normative considerations (i.e. on the basis of some notion of minimum desirable consumption level), yet once determined, the norms are then applied to the situation as it obtains in a given milieu.

A somewhat different analytical problem arises when the phenomena, within which poverty exists, are sought to be changed through policy measures with a view to lifting a given proportion of population above the poverty line. In this situation, the evaluator who has been entrusted with the task of monitoring the results of these policy measures, has to devise criteria of whether and to what precise extent a part of the target group has actually crossed the poverty line. The criteria should be adequate not only to provide answer to the question, how many persons|households crossed the poverty line as a result of the poverty alleviation programme but also how far is the poverty eradication really viable in the sense of those having crossed the poverty line being able to permanently stay in that position. This paper is concerned with highlighting some of the issues which the evaluator has to face in monitoring the results of such programmes.

Sixth Plan and poverty eradication

Poverty eradication is one of the principal goals of India's Sixth Five Year Plan. In this regard, a quantitative target has been laid down, viz. that of reducing the proportion of population below the poverty line from 48.4 per cent in 1979-80 to 30 per cent in 1984-85. In the light of the revision of population data necessitated by the 1981 census, the base year proportion of population below the poverty line was revised upwards to 51.1 per cent. Besides this quantification of the target of poverty eradication, the package of policies for the achievement of the target of poverty eradication was specified. In the rural context, it was laid down by the Planning Commission that the rural poor "need to be enabled to acquire productive assets and|or appropriate skills and vocational opportunities and then backed effectively with services to increase production and productivity." This policy package for rural poverty eradication was to be implemented under the Integrated Rural Development Programme (IRDP) and the National Rural Employment Programme (NREP)

Issues relating to the monitoring of the progress of poverty eradication programme have surfaced since the mid-term appraisal of the Sixth Plan. In the Mid-Term Appraisal document, certain assumptions have been made regarding the monitoring of the progress of poverty eradication under the IRDP and the NREP. The Planning Commission maintains in the document that "Over 1980-81 and 1981-82, a large number of families below the poverty line are expected to have crossed it because of the rise in their real incomes, partly through the adoption of specific poverty alleviation programmes like IRDP and NREP." The Commission expected the real position in this regard would be revealed by the results of the National Sample Survey for the year 1983. However, pending the availability of these results, the number of percentage of people below the poverty line are estimated by the Commission "on the basis of the assumption that increase in real income is uniform in all the expenditure classes and the number of families brought above the poverty line is relatable directly to the corresponding expenditure in IRDP and NREP. Adopting this method, the percentage of poverty, it is estimated, came down to 41.5 and the total number of persons below the poverty to 282 million in 1981-82*."

This method of evaluation of the progress of poverty eradication has come to be questioned on several grounds. K Sundaram and Suresh D. Tendulkar, for instance, argue *inter alia* that the expenditure on IRDP is not directly relatable to and cannot have a proportional relationship with poverty eradication because of (i) leakages in disbursements of expenditure, (ii) utilisation of a part of such expenditure for strengthening of administrative and infrastructural support, (iii) the income-asset ratio being on an average less than unity, since a part of the IRDP expenditure may be diverted by the beneficiaries to their compelling consumption requirements, and (iv) the beneficiaries under the category of "poorest of the poor" require much more than the average expenditure under IRDP to lift them above the poverty line. Similar questions about the methodology of monitoring poverty eradication programmes in the mid-term appraisal of the Sixth Plan have been raised by Prof. Raj Krishna, a former member of the Planning Commission. Additionally, Raj Krishna has referred to the possibility of "considerable multiple counting of beneficiaries under different schemes*."

The foregoing are indeed real issues which shall have to be resolved by any agency concerned with monitoring and evaluation of the impact of poverty alleviation programmes Besides these problems which are essentially of an empirical nature, there are some other conceptual and analytical problems which cry for solution if the monitoring agencies are not to turn up spurious estimates of poverty eradication. These problems need to be solved in the interest of devising satisfactory methods of monitoring the number of people and households who do or do not cross the pre-determined poverty line as a result of the poverty eradication programmes like the IRDP and NREP. These are, in fact, problems as much of implementation of such programme as of evaluation.

Problems of evaluation

These problems may be discussed below.

Poverty alleviation be stable

1. Attention has been drawn to the question of the time dimension of poverty alleviation, or its viability, or the question of its stability. For instance, Sundaram and Tendulkar observe that"... ..redistribution cannot be viewed as a one-shot transfer of consumer expenditure from the rich to the poor. Instead, it should be regarded as a process over time, or raising in a sustained fashion the economic viability of the poor households." Raj Krishna makes a similar point relating to the NREP when he says that "The additional employment that a landless worker gets under the NREP may not be enough to enable his family to rise above the poverty line, and it may not be *stable* enough to keep the family *permanently* above the poverty line"

Thus, the problem which has to be faced in monitoring the results of the IRDP and the NREP or similar programmes is whether the expenditure made under them, or the assets transferred to the concerned households would enable the beneficiaries to permanently stay above the poverty line. The programme would not be considered as successful if the benefit to the household was merely transient The evaluator has, therefore, to separate the beneficiary households with policy-induced permanently built-in income flows, from those which temporarily rise above the poverty line, but are likely to slide back to the original position due to the impermanence of the income flow within the household. Thus clearly, poverty alleviation has a time dimension. It is not sufficient to enable a household to cross the poverty line; it is equally necessary to ensure that the target group would be permanently viable in the economic sense This fact must be kept in view while evaluating the concerned programmes.

It should be real

2. Analogous to the question of 'income-gap' (i.e. the income shortfall of a person whose income is less than the poverty-line income) raised by Amartya Sen,* a monitoring problem arises in the context of households having been raised above the poverty line through a poverty alleviation programme The question to be considered would be · how far

*Mid-term Appraisal, Sixth Five Year Plan

*Economic & Political Weekly, Nov 19, 1983

above the poverty line have the households been raised? If the rise is marginally above the line, then it is clear that the households would be unable to face contingencies like a serious illness, marriage, death, or even child births, without the erosion of their economic status and their consequent slide back to the original position. If a household is, therefore, currently counted as having crossed the poverty line, thanks to a certain poverty alleviation programme, but it was still marginally above the line, it is quite likely that due to one contingency or the other, it will soon fall below the line. Thus, in a monitoring exercise, the evaluator would be justified in counting only those households as having crossed the poverty line in whose case the rise was substantially above the line. The concerned programme should therefore, create a wide enough gap between the incomes of the beneficiaries and the poverty line income so that contingencies do not result in a slide back. Although this and the preceding problems appear to be identical, yet there is a qualitative difference between the two. The former relates to the size of the benefit, while the latter relates to the creation of permanent income flow through time. In the monitoring exercise, only those households should be counted as having crossed the poverty line in whose case the income flow is both stable through time and too far above the poverty line to leave room for a slide back on account of contingencies.

3. While monitoring the results of a poverty eradication programme, the evaluator can be more sure of counting the beneficiaries as having crossed the poverty line, if a given expenditure considered as adequate for placing them above the line has been spent on providing a package of amenities, like those contemplated under the minimum needs programme, rather than on transferring a single asset or facility to the concerned households (like the supply of milch cattle, or agricultural land, or provision of employment).

In the eradication of poverty, problems are created by factors like heterogeneity of families on account of differences in health, age, nature of work, physical environment, resource endowment, etc. When such diverse households are treated under a poverty alleviation programme, provision of single assets or amenities would fail to meet their heterogeneous requirements. The programme in that event will not be viable through time, even if the concerned households are currently enabled to cross the poverty line. The task of the evaluator would be made easier if a package of amenities has been provided. It is for this reason perhaps that the Planning Commission has recommended that "The household-centered poverty alleviation strategy will thus come to consist of steps not only for the economic emancipation of the family, but also the education of the children, health and welfare of the vulnerable members, adoption of small family norm etc.", (Sixth Five Year Plan, 1980—84) Such a package is sure to create a sufficient enough income flow within the household to ensure both stability of welfare through time and its adequacy.

4. As is clear from the preceding paragraph, the Planning Commission has adopted a "household-centered poverty alleviation strategy." However, in monitoring the results of the strategy, a problem analogous to the well-known difficulty of recording the progress of an economy in terms of per capita income (which conceals the inter-class differences in income distribution), arises in the context of a household too. The impact of the poverty alleviation programme is evaluated in terms of so many persons having crossed the poverty line, although the programme deals with households rather than persons. The implicit assumption is that the benefits of the programme provided to a household would seep down to all members of the family in an equitable manner. However, this raises the question of intra-household distribution of income, consumption, etc. Research in this field has revealed considerable intra-household maldistribution of food, health and educational facilities. These intra-household disparities are highlighted in these words of Pranab Bardhan:* "... ...the male child is a potential source of economic support and gets the lion's share of parental attention and nourishment compared to his sister." This male bias in intra-family distribution of food and other amenities falsifies the assumption that if a household is enabled to cross the poverty line, it should be taken as the crossing of the line by all its members. This hypothesis of intra-household maldistribution, if correct, points to the pitfalls of the evaluation of poverty alleviation programmes and calls for caution against hasty conclusions being drawn from insufficient data.

5. Just any expenditure made to benefit the target groups under a poverty alleviation programme like the IRDP, even if quantitatively sufficient to fill the gap between the actual income of the household and the poverty line income, cannot be considered as having enabled the household to become economically viable. A given expenditure in one case can help create productive assets, raise productivity, and thus generate an income flow within the household, but in another case it may be a mere financial transfer which may get frittered away in the observance of a ceremony, or the celebration of a feast, leaving the household unaffected by the transfer. These differences in the nature of the expenditures made and the responses from the target-households elicited (in one case money or resources being used for asset creation, in the other, for essential or conspicuous consumption) can again create problems for genuine

(*Continued on page* 32)

Poverty and famines, An Essay on Entitlement and Deprivation, 1981

Tackling credit gap in rural development!

Dr. G.S. Kamat

The existence of financial institutions in villages has not bridged the gap in rural development as can be seen in the numerous schemes having failed to bring about desired uplift of the poor. The author calls for evolving area approach by financing agencies to ensure rural development in an integrated manner under conditions of reasonable stability. The quantum of credit flowing into the IRDP has been lagging far behind requirements. The financial agencies must, therefore, act as catalyst of development through an integrated institutional structure, says the author.

RURAL DEVELOPMENT has come to be recognised as an important approach for minimising object poverty, gross inequalities in income distribution and wealth, chronic unemployment, ignorance, and distressing living conditions in rural areas. This approach does not remain restricted to developing rural areas only, but also extends to development of the rual communities by generating process of self-reliant and self-sustained healthy growth. The villagers need food, clothing and shelter as also sanitation, health-care and primary educational facilities of certain minimum standards.

The Sixth Plan had accorded priority to development of agriculture, allied activities and rural industries. A number of experiments have been made through earlier Five Year Plans for stregnthening the rural economy and improving the conditions of the rural people. After Independence, the Community Development Programme, the National Extension Schemes, the Small Farmers Developing Agencies and the Marginal Farmers and Agricultural Labourer Agencies were instituted, side by side various types of development financing agencies. These schemes were viewed with lot of hope and expectations. Yet they have not been able to make much impact, except in a few cases.

Why slow growth?

Why rural growth has remained slow and why rural poverty has been increasing over these years ? Many studies have revealed that the weaker sections had limited access to natural resources as also to appropriate technology and services to sustain a higher level of productive employment It has been also proved that whatever benefits accrued as a result of development activities in rural areas they were inequitably distributed, larger benefits going to the vested interests. It is true, that major constraint on the development of rural poor has been their lop-sided dependence on agriculture for livelihood. Particularly in the regions affected by floods or draught prospects of improvement in living conditions of the weaker sections have been virtually washed away It is estimated that draught prone area of India is about 6,00,000 sq. kms. covering a population of 66 millions. The succession of draught years seriously affected harvests and more than 75 p c. of the total rural population received a serious set back. Particularly, owners of small and fragmented holdings, tenants and share croppers, the landless and the artisans have been facing insurmountable problems.

The rural development programmes are designed to improve the economic and social life of these rural weaker sections. Their implementation in an integrated manner is expected to extend the benefits of deve-

ment to these sections. Thus, apart from the schemes mulated for generating productive employment opportunities in rural areas, leading to increased proctivity and production, the IRDP aims at improved od supplies and nutrition along with basic services ch as health, education and housing.

Bewildering variety of lending agencies

The process would very much require modernisan and monetisation of rural economy and its linke in an organic manner to the national economy. e financing institutions have, therefore, to play a adership role with entrepreneurial talents in bringg about integrated rural growth One serious conaint, which has been responsible for glaring consion in regard to policies and programmes of financg IRDP, has been lack of perspective in regard to e eventual pattern and structure of financing institutns in the rural India One would notice a bewilderg variety of institutional lenders in rural areas today. ere is a widespread, though weak federal structure co-operative credit consisting of 1.20 lakhs village rvice co-operatives, more than 300 central co-operae banks at the district level and about 28 state coerative banks at the top, to provide short-term edit to agriculture

In addition, there are as many state co-operative nd development banks with their affiliated branches the district or taluka levels which give long-term ans to farmers for productive investment in agriculre. Further, the nationalised commercial banks have en briskly branching out in the rural areas since e early seventies. In recent years, the so called Reonal Rural Banks (RRB) have been set-up for the me purpose. The State governments also occasional- advance taccavi loans to people in rural areas fected during periods of natural calamities There e a number of other agencies financing different tivities in rural areas under their own specific hemes of development like the Khadi and Village Industries Commission and other specific statutory development corporations functioning at the national and the state levels.

The gap !

Despite existance of these institutions, there still remains a big credit gap to meet the requirements of the rural communities The traditional money-lender is still not displaced and continues to carry on his usurious money-lending activites. Now, the National Bank for Agriculture and Rural Development (NABARD) has come to regulate disbursement of rural credit by the co-operatives, the commercial banks, the RRBs etc It can be anybody's guess, whether desired or not, the whole structure of rural credit is bound to undergo a qualitative change in the coming years. For example, the Hazari Committee report had already recommended integration of Primary Village Co-operatives and Primary Land Development Banks in a phased manner so that the farmer can get short term, medium term and long term loans from the same base level agency. The Land Bank Scheme, in its modified and improved form, expects commercial banks to penetrate the rural side in a coordinated manner, operating closely with the development machinery of the state governments and in backward areas through adoption of primary village societies. But this scheme has failed.

Area approach !

It would be obvious that the concept of IRDP is a multi-level, multisectoral concept. It encompasses agriculture, industries, education, health, transport etc. keeping in view the rural poor such as landless labourers, artisans, small and marginal farmers and categories of scheduled castes and scheduled tribes. The Sixth Plan had stresed the importance of rural development through labour intensive forms and methods of production. The District Industries Centres are wisely conceived but would need revamping to improve prospects of decentralised industrial production.

Certain vital areas of agricultural management need institutional infrastructure to facilitate economies of scale through group action. Individual efforts in agricultural activity very much require support of services for soil conservation, supply of energy, harvesting and adoption of improved post-harvest technology. The total credit policy and schemes of financing agencies under IRDP operating in rural areas have to be dovetailed in the above directions avoiding, in the process, the undesirable overlaps The policy of "area approach" in formulating credit schemes, envisaging functional linkages amongst activities to be financed and supported by the necessary infrastructure, has very much to commend itself in favour of the IRDP. The present practice of acting independently and in isolation on the part of the various agencies concerned with rural development including financing agencies, has only added to confusion and chaotic operations There is evidence to show that very little has been achieved in proportion to the organisational efforts made and various inputs provided for the purpose

The wastage and the frustrations that have emerged in the process have been highlighted through various studies conducted on the subject of IRDP The Rural Works Programme, Employment-cum-Production Scheme, (Food for Work Programme), Antyodaya scheme, Employment Guarantee Scheme etc. have had a piecemeal approach to the whole problem of rural development. The schemes were formulated and implemented at different stages and at different times. At each stage, financial resources were so to say concentrated on respective schemes.

Eventually, however, each of these schemes found itself relegated to the background in favour of something new. Hence the need for area approach on the part of financing agencies to bring about rural development in an integrated manner under conditions of

reasonable stability. For example, the financing structure of the country must evaluate impact of its schemes of rural development against the criteria of checking migration of the weaker sections to the urban area. Their schemes must be judged as to whether, as a consequence, they have been able to generate new opportunities for the rural poor for improving their income levels and quality of life.

Support areas

It is true that the financing agencies would need support in the performance of their tasks in regard to build up proper and up-to-date land records, making administrative arrangements for securing consolidation of land holdings, registration of rights of share croppers, census of rural people engaged in various economic activities etc. One of the reasons for slow pace of development has been serious inadequacy of relevant information about these matters and on a dependable basis. Complementary to this, the financing agencies would have to strengthen their human resources appropriately, for performance in rural surroundings and with a sense of commitment. The pressures from all sides—the community, the Government and the load of work that is continuously and tremendously increasing—are gathering fast momentum. The financing agencis would have to accommodate schemes pertaining to minor irrigation, rural electrification, rural industries and other types of rural development programmes. The quantum of credit that is flowing into such areas of development has been lagging far behind the requirements and excluding weaker-sections in particular, leaving their capacities unexplored and unexploited for contribution on their part to the process of development. The financing agencies have to function, therefore, as important catalytic agents for solving the problem of rural poverty and unemployment through an integrated institutional structure.

(*Contd. from page* 29)

evaluation of the impact of poverty amelioration programmes. Associating poverty alleviation only with expenditure made under the programme needs to be avoided. The criterion should indeed be the adequacy and permanence of the income flow created within the household rather than the expenditure made.

The foregoing discussion of the problems of evaluation of poverty eradication programmes underlines the point that an arithmetical approach of 'so much money having been spent and, therefore, so many households having been enabled to cross the poverty line' needs to be avoided if the country is not to delude itself into believing that poverty is being eradicated at a rapid rate while indeed much might still remain yet to be accomplished. The evaluation of such programmes needs detailed information on the depth of poverty of the target groups, household size and intra-household distribution of consumption expenditure, responses elicited from the beneficiary households, degree of leakage of benefits, nature of benefits transferred, etc. In the absence of such detailed information, programme evaluation would remain superficial, only turning out unreliable estimates of poverty eradication. □

(*Contd. from page* 26)

there is any need to restrict|enlarge the scheme coming under a particular IRD etc. It can also prepare a list of priority villages, schemewise, for the block. This group need to meet once in three months or s

The office bearers from all blocks can, at the district level, form a District Youth Federation. All the Government level functionaries from the district can also be associated with this Federation as ex-officio members. This tier will have to ensure proper planning, monitoring implementation of the programme within the district keeping in view the qualitative and quantitative socio-economic milieu of the area.

This top tier can be assigned with functions like

(i) identifying relevant need-based|community based schemes to be included for the next year;

(ii) if need be, re-formulate, restate the eligibility criteria for each scheme;

(iii) identifying the inaccessibility of the scheme with the poor and suggest concrete monitoring technique to improve the capacity ability of the RDPs to benefit the poor;

(iv) to conduct impact analysis of the approved schemes with the help of experts from related fields.

The author is quite sure that in each village the youth will come forward to serve their own fellowmen through this organisation. Perhaps, to start with, there may be some teething trouble and as days pass and once it gets going, it would definitely prove a blessing for the implementation of our rural development programme.

Integration of the young with the project implementation network envisaged in this paper would definitely create a sense of involvement in minds of youth in the nation-building work and would avoid a lot of social and economic tensions in our villages. Moreover, the target group will feel very secure and confident to approach their own village youth to pursuade them also to avail themselves of the benefits. It is also very easy for youth, once they come to know about the schemes, to spread the news to the target group.

This integrated approach if caught in wrong rai can easily be dismissed as being organisationally cumbersome and practically redundant. However, experience tells us where workable approaches are not available, new organisational approaches which are meant to monitor the programme has always proved to be very effective.

Taming the sun in sands

S. Mahawal

A good deal of research is being done all over the world to harness the solar energy. It is said that the solar energy showered on the Rajasthan desert alone is enough to meet the energy demand of the entire world.

WITH THE RECENT THRUST ON alternative sources of energy, the achievement of the Central Arid Zone Research Insitute (CAZRI Jodhpur, to harness the energy of the sun is stedily gaining importance. It is said that the solar energy showered on the desert of Rajasthan alone is enough to meet the energy demand of the entire world.

Among the appliances developed by CAZRI to use solar energy for urban as well as rural requirements are a collector-mum-storage type solar water heater, a water heater cum-steam cooker, a water heater-mum-still and a solar cabinet dryer with automatic regulation of temperature. It has also carried out investigations on the solar radiation regime over India.

Arid Zone

In India, the arid zone covers about 12 per cent of the country's geographical area, of which over 3.2 million square kilometres comprises the hot Thar Desert covering the states of Rajasthan, Gujarat and Haryana. This vast stretch is mainly sandy plains, hummocks and undulatin gdunes. Besides, another 90,000 sq. kms. comprise the cold desert in Jammu and Kashmir and Himachal Pradesh.

The Great Thar is unique in the sense that it is one of the most thickly populated deserts of the world having a population of over 19 million people with an avarage density of 61 persons per square km. The density for other deserts is just 3. In the arid zone of Rajasthan alone, the livestock population has increased from 10.27 million in 1951 to 16.44 million in twenty years The low carrying capacity of the land and the increased pressure of the livestock on the natural greenery results in depletion of natural vegetation and further desertification.

The bulk of the hot arid areas is located over raughly three-fiths of Rajasthan covering the eleven western districts of the State

The statement made by the Planning Commission that the Indian desert was spreading eastwards in a great convex arc, at the rate of half a mile per year, and the resolutions of the symposium on the Rajputana Desert organised by the Indian National Science Academy (INSA) in 1952 emphasised the ned for scientific management of the arid rangelands Accordingly, the Government of India, acting on the recommendations of the UNESCO Advisory Committee for Arid-Zone Research, established a Desert Afforesation Station at Jodhpur in 1952. The station was re-organised and redesignated as the Central Arid Zone Research Institute (CAZRI) in 1959.

Arresting the desert

Meeting the challenge of the shifting sand dunes was one of CAZRI's primary objectives. After innumerable trials, effective techniques for sand-dune stabilisation have ben evolved. This includes establishing wind breaks and shelter belts of desert plants to provide obstacles to the free swep of wind and thus reduce its velocity. Such obstacles, while preventing soil erosion also reduce evaporation from the soil and minimise the dessicating effect of the wind. The average initial cost of this stablisation technique is just Rs 760 per hectare and this too can be recovered soon

Studies have revealed that the stablisation of the shifting sand-dunes not only checks the movement of the desert, but brings about a marked improvement in soil fertility. Usually about 50 to 70 mm of moisture is present upto one metre depth in the unstabilised dunes which helps in seedling establishment. Although the unstabilized dunes usualy have a high soil moisture status mircrobial population is

more in stabilised ones, presumably as more organic matter is available following the presence of vegetation.

Stopping the desert from spreading is a very important job of CAZRI, but it is not the only activity. The Institute has developed improved varieties of various fruit plants adapted to desert conditions like 'Ber', for oilseeds 'Tumpa', date palm, guava, pomegranate, custard apple and mulberry. CAZRI has isolated Candelilla wax, a desert plant of Maxican origin, which has adapted well to the arid conditions of Western Rajasthan. It holds much promise as an industrial raw material of great enconomic importance. Several medicinal oil bearing eucalyptus species have also been developed and their plantation done in the Institute's farms for further research

The desert is home for some of the hardiest breeds of sheep in the country, like Pugal, Chokla and Jaisalmeri. But the quality and quantity of wool yielded by these animals used to be quite poor Efforts have been made at CAZRI to develop a bio-chemical approach to sheep production so that they yield finer and move wool. Similarly, the Institute has drawn the attention of animal specialists to a little known breed of much goat from the Rajasthan desert and has named it "Parbatsar Breed". This animal has distinctly superior potentialities as a milk yielder for the desert region.

To enable farmers to benefit from the technology developed at CAZI and to identify the gaps and constraints in the technology transfer process, two operational research projects on "Arid land management" and 'Drip and sprinkler irrigation systems" have been undertaken in a cluster of five villages near Jodhpur.

Two hundred farm families belonging to the weaker sections of rural society have been adopted for total development. Demonstrations of arid land technologies is givn right in the field and training, both on-the-spot and at the Institute level, is conducted for the farmers.

Living right in the heart of the desert, enduring discomfort and privation, the scientists at CAZRI are engaked in the important task of making life easier and better for the desert dweller. For them and for generations to come CAZRI and its work will be bountiful boons and the desert will no longer remain just sun and sand--it will be LIFE. □

Welfare measures for the disabled !

THE SCALES FOR the recurring expenses on children living in the destitute children's homes have been revised from Rs. 92.50 per child per month to Rs. 150 per child per month

This has ben done on the basis of recommendations made by an Expert Group constituted by the Government to go into the functioning of the Scheme for the welfare of Children in need of care and protection.

More than 400 voluntary organisations all over the country received an amount of about Rs 570 lakhs as financial assistance during the last three years for the education, training and rehabilitation of the handicapped.

Over Rs. 363 lakhs was spent during the last three years for supplying aids and appliances, costing between Rs. 25 and Rs. 1500 to the physically handicapped free of cost. While the number of beneficiaries during 1982-83 was 23,077, the number rose to 24,974 in 1983-84. More than Rs. 405 lakhs were disbursed to the handicapped by way of stipend| scholarships during the years 1982-83, 1983-84, and 1984-85. The number of student beneficiaries in 1982-83 was 10,819 and during 1983-84 it rose to 13,894.

To assist the handicapped in getting employment, 22 special employment exchanges and 36 special employment cells in normal employment exchanges are exclusively engaged in the placement of the handicapped. During the past three years 21.555 handicapped persons were given jobs through these exchanges. Besides, 14 vocational rehabilitation centres have been set up to assess the residual ability of the disabled, arrange their training and place them in regular employment. During the year 1982-83, and 1984, 12,198 handicapped persons were rehabilitated by the vocational centres.

In respect of schemes for the handicapped in the rural areas, the District Rehabilitation Centres Scheme, under which the target population is the rural disabled, has been launched on a pilot basis in six districs in the country. Besides, 11 Rural Centres have been set up attached to the Vocational Rehabilitation Centres which look after the vocational needs of the rural handicapped exclusively.

National highways

THE TOTAL LENGTH of National Highways in the country date is 31,710 kms Out of this, about 8,123 kms. is of single lane, 982 kms. intermediate lane and remaining 22,605 kms. two lane or more. Three major missing bridges are to be constructed on National Highways declared prior to the Sixth Plan.

A sum of about Rs. 4,500 crore is required to remove deficiencies in the National Highway System which existed on April 1, 1980 at 1983-84 prices The development of National Highways is a continuous process and the time frame for removal of deficiencies will depend upon the availability of resources

Harnessing media for family welfare !

INTENSIFIED EFFORTS using various media channels to increase the demand for contraception, expansion of infrastructural facilities, provision of wide choice of contraceptives through the cafeteria approach, emphasis on rapid increase in female literacy and population education, enforcement of the law relating to minimum age for marriages for boys and girls, proper linkages with all departments/ Ministries of Government, incentives to individual acceptors and State Governments and securing maximum possible community participation would be the major features of the strategy to promote family welfare during the Seventh Plan period.

The emphasis will be on continuous monitoring of the family welfare programme at the highest level in the States. A dialogue has been initiated with leading business houses and leading advertisers for their greater involvement in the family welfare programme.

The Seventh Plan projected target is 31 million sterilisations, 21 25 million IUD insertions, and 62.5 million conventional contraceptive and oral pill users, with a view to achieving the couple protection rate of 42 per cent by 1990. The couple protection rate at the end of the Sixth Plan period stood at 31.9 per cent.

The allocation of funds for family welfare has increased from Rs. 25 lakh in the first Five Year Plan to Rs. 1448 crore in the Sixth Plan period. During 1985-86, the first year of the Seventh Plan, a provision of Rs. 500 crore has been made for family welfare.

Sterilisation is popular in rural areas whereas the spacing method is popular in urban areas. The new strategy would be to popularise the spacing method throughout the country as the success of the programme depended more on attracting younger couples with fewer children.

With continued political commitment and efficient management of the programme, the country would be able to achieve the couple protection rate of 60 per cent by A.D. 2000

The recent decisions for creation of a Miscellaneous Purpose Fund of Rs. 3 per IUD insertion, additional assistance of Rs. 15 per case of MTP and enhancement of the POL expenses on vehicles are expected to give further impetus to the programme. The staffing pattern of the Family Welfare Machinery in the State is being strengthened to make it need-based. The health service infrastructure in the rural areas is being strengthened and training programmes for all categories of family planning personnel organised.

The Government has already implemented a scheme of giving an additional compensation money of Rs. 20 to couples with three or less than three children adopting sterilisation.

The medical scientists are on the verge of making a breakthrough in the production of an anti-pregnancy vaccine. This vaccine is expected to be put to human trial by early next year.[ ]

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Recasting IRDP for wider coverage !

THE TWO-FOLD STRATEGY for the Seventh Plan for alleviation of rural poverty comprises consolidation of gains already made through repeat assistance to old beneficiaries and provision of a package of micro-schemes for new beneficiaries with substantially larger per household investment.

Steps have already been initiated to recast Integrated Rural Development Programme under which a minimum of Rs. 6,000 per family would be invested for new beneficiaries.

Also the approach of unanimity has been replaced with one of selectivity based on incidence of poverty.

Since the Sixth Plan assertion that the reduction in poverty should receive the highest priority in development strategy on the quantitative side the IRDP has made good progress, providing assets to 16.56 million families of which 6.45 million belong to Scheduled Castes and Scheduled Tribes. The total budgetary expenditure on the programme was Rs 1,661 39 crore and the term credit mobilised was Rs. 31 35 crore. All these were in excess of the targets fixed.

The qualitative deficiences like wrong identification of beneficiaries, delays in disbursement of subsidies and under payment to beneficiaries were sought to be removed through various steps during the Sixth Plan.

As for the National Rural Employment Programme (NREP) intended to generate 1,500—2,000 million mandays of additional employment during the Sixth Plan, Rs. 1,878 crore was provided to achieve physical targets and returns indicated that additional employment generated was of the order of 1,775 million mandays.

Under the Rural Landless Employment Guarantee Programme (RLEGP) during 1984-85 which was the first full year of the programme launched in the middle of 1983-84 nearly 260 million mandays of additional employment were generated. Thus together NREP and RLEGP generated 2,035 million mandays of additional employment which was more than Sixth Plan target for employment generation.

In spite of the achievement under IRDP, the number of persons below poverty line in rural areas has been estimated at 216 million at the beginning of the current year. It has to be considered, therefore, whether the conceptual framework for poverty alleviation responded to our social realities and whether we needed to modify our basic strategy.

As far as the debate on the question of productive assets programmes versus wage employment programme is concerned the focus on both IRDP and the employment generation programme may have to be continued although the exact mix of the two may vary.

The States have been asked to involve village level voluntary organisations and beneficiaries in the rural development programmes. Efforts have also been made to ensure that the Panchayati Raj institutions play their due role in this field.

The Centre has taken a decision in principle to launch a new scheme this year for organised rural poor so that they could act as pressure groups to secure and defend their legitimate rights and benefits.

As the approach to the Seventh Plan calls for redistributed land reforms and security of tenure to informal tenants to be integrated with anti-poverty package of programmes, the State Revenue Ministers have been urged to initiate a campaign to bring informal and oral tenants on record. They have also been asked to consider the question of moving towards stricter definition of personal cultivation to prevent informal tenancies and consider measure which will give more surplus land for distribution to landless poor.□

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Tardy implementation of IRDP

NEXT ISSUE

Vocationalisation of education

Controlling air pollution

THERE IS URGENT need to tackle the problem of air pollution particularly in thermal power stations. While the air pollution levels in several advanced countries are going down, in India they are going up. The level of sulphur dioxide and particulate matter in several Indian cities already exceed the permissible limits set by the World Health Organisation (WHO).

The coal ash emanating from the power stations located in Indraprastha in Delhi mostly settles down in various parts of the city. It is roughly estimated at about 50 tonnes per day. This is inspite of the fact that certain pollution control measures are already in practice in these power stations.

Since the ash content in coal available in the country is steadily increasing, the need for combating the hazard of particulate emissions into the air is much more now than before. While simple devices such as scrubbing, filteration, etc. can be employed for arresting and removing particulates from the fuel gases, the more effective and scientific method would be to electro-precipitate the particulates and also the toxic gases. The design of the equipment to handle a particular load of particulates, the efficiency with which the equipment is operated, the preventive and regular maintenance of the equipment and its cost effectiveness are matters of great importance for the user industry.

Electrostatic Precipitators are very helpful in pollution control. Andrew Yulo which was manufacturing a wide range of industrial air pollution control equipment systems and allied products is now going into larger capacity Electrostatic Precipitators (ESPs) especially engineered and designed to increase the efficiency of thermal power stations. ESPs are designed for high efficiency performance and are capable of taking care of the peculiarities of available Indian coal.□

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Deforestation to our peril !

Vir Singh

Deforestation is being pursued indiscriminately and very fast. Since 1950, about half of the world's forest cover has vanished and every year an area of the size of Cuba is left barren, points out the author. Responsible for this are the government policies and the human as well as natural factors. This may seriously affect the genetic diversity of plant and animal kingdom so essential for the health of this planet. The author calls upon the government and planners to view the problem with all seriousness.

WHY DID THE Mayan civilisation all of a sudden disappear from land surface ? Why was the Mesopotamian civilisation lost for ever ? Why were the Mohen-jo-daro and Harappa civilisations wiped out from this continent ? A recent study of scientists from Chicago University has discovered answers to these questions According to the scientists, the land on which the civilisations depended for sustenance became unfertile thus leading to their sudden collapse.

When we are expanding our wings towards skies, we are being threatened on our own planet It will be suicidal for man to let six million hectares of his land surface turn into desert every year. From 3,123 million acres of crop land all over the world, we are lossing 22,700 million tonns of top fertile soil annually.

Rapid erosion

The survival of the top soil depends on the vegetation But the dismal situation is that the world's trees are being felled at a rate faster than nature or man can replace them. Since 1950, nearly half of the world's forest cover has vanished and an area of the size of Cuba is left barren every year.

Desertification is death creeping on the surface of earth. No one will escape the dangerous effects of deforestation, whether through non-availability of bread, or, at worst, through destructive changes of climate To preserve forests and thus to avert the process of desertification is the only option if one is to ensure life on this planet.

Once known as 'land of honey and milk', India now presents a gloomy picture. The rate of deforestation in our country is 2 hectares per minute due to which nearly 1 per cent of the land surface of the country is being laid bare every year. Though it is claimed that country's 22.7 per cent land surface is covered by forests the actual forest area is hardly more than 10 per cent of the land surface. Nearly 10 million hectares, out of 75 million hectares land is almost completely denuded of the tree cover and has wrongly been classified as 'forests'.

Endangering ecological balance

Himalaya, the youngest and most fragile of the world's mountaineous range; is the most conspicuous case of ecological carnage. According to official figures, the U.P. Himalayas have forest cover on 60 per cent of its surface. However, on the basis of imageries of photographs, taken by satellite, the scientists of Kumaon University have calculated that eight districts of U P. hills have forests only on 31 per cent area. Further, good forests with more than 60 per cent crown cover exist only on 4.8 per cent area, 16.2 per cent areas is under medium density forests and 10 per cent under low-grade forests

Owing to this gloomy situation soil erosion in India has attained an alarming proportion. Accord-

ing to an estimate, out of 304 million hectares, the total land area of the country, 150 million hectares, i.e., 49.34 per cent of the total crop land is affected by serious water and wind erosion. Apart from it, 2.5 million hectares is affected due to wrong agricultural practices, like shifting cultivation (jhoom), cultivation of low lying river side areas, expansion of cultivation on mountain slopes with inclines of more than 25° and penetration of agriculture in the higher reaches of the mountains and utilization of the high meadows. This shows that over 50 per cent crop land area is threatened by desertification.

According to a survey conducted in 1972 by a team of scientists, quantity of top soil displaced by water alone was estimated at 6,000 million tons every year. This may have increased many times by now. The water of our rivers has turned chocolate brown in colour due to excessive mud.

The impoverished Himalayas !

In 1974, an American satellite had discovered by means of infra-red photography a gigantic shallow in the Gulf of Bengal. This shallow has an area of more than 50,000 square Km (nearly equal to the area of U.P. hills) and has been formed by the silts deposited in the sea by the Ganges and the Brahmaputra. Mr. Sunder Lal Bahuguna, the architect of Chipko Movement, rightly says that wealth of the Himalaya is disappearing into the Bay of Bengal. In some areas the rate of deforestation accompanied by erosion down to bare rock has already reached a catastrophic magnitude. Earlier Sterling had warned that this could alter the lives of about 100 million people for the worse, as tens of millions had already learned.

The Himalaya, which extends for 2800 km from East to West with a breadth varying from 330 to 735 km, has global impact on climate. When moisture laden clouds pass over the Himalaya, their precipitation takes place. Had there been no Himalaya, the condition of our country would have resembled that of Arabian countries. Rainfall has already declined by 3 to 4 per cent in the Himalayan area due to deforestation.

According to 1972 estimates, with 60,000 million tons of top fertile soil eroded every year, 6 million tons of soil nutrients are also swept into the sea causing a loss of Rs. 7,000 millions This erosion has now gone upto Rs. 10,000 million per year. The loss due to top soil erosion is estimated at Rs. 30,000 millions, assumed at triple the value of nutrients.

This loss is irreparable and taking it in terms of only money, will not be a wise step Soil erosion is not immediately felt. It may taken a few years, but ultimately results will be devastating. Lesson should be taken from the history. Sahara, Gobi, That, etc. are the wounds on the face of the earth inflicted by man. If the present trends continue, life on earth will become impossible.

Menacing floods

Devastating floods in the plains every year give the warning of deforestation in the upper land. According to official figures, damage due to floods in 1951 was estimated at Rs. 210 millions. It increased to Rs. 11,000 million in 1977. During the decade 1970-80, the crop damages accounted for Rs. 4,400 millions per year and non-crop damages for Rs. 2,990.

Heavy siltation play havoc with the dams and hydroelectric projects. For example, the estimated life of 75 years of Tehri dam has now been reduced to about 20 years according to surveys conducted by experts, on the basis of heavy rate of siltation in the area. At present annual losses due to damage to dams, reservior, etc. has been around Rs. 10,000 millions

The average annual cost of building storage tanks to store water equal to the amount of ground water stored by the forest area that is lost every year is estimated at Rs. 5,000 millions Loss by deforestation when there is no contribution to ecology by the way of protein conversion is assumed to be Rs. 100,000 millions. Value of timber and fuelwood lost by deforestation is estimated at 1 million hectare and Rs. 5,000 per hectare per year without plans to replant the denuded area.

When summed up, the annual losses due to deforestation are equal to Rs. 1,64,200 millions. This reveals the calamity we are at present facing only in terms of money. However, the indirect calamities we are going to face in future, like depletion in the genetic diversity of plant and animal kingdom, the very key to the health of our planet—and gradual appearance of the deserts ultimately turning land "as barren as moon" will be beyond the language of statistics.

We can not overlook the seriousness of this cancerous phenomenon. It is high time our governments, planners and scientists viewed it seriously.

Thermal power generation goes up

THE PERFORMANCE OF thermal power stations has improved with the plant load factor (PLF) touching 50.8 per cent during April to August, 1985. This has exceeded the target of 48.6 per cent set for the period. Better plant maintenance and the stabilization of newly installed units have led to the increased thermal generation. The plant load factor during the same period last year was 46.1 per cent.

The total power generated during August, 1985 was 14050 million units, which is 7.9 per cent more than the corresponding period last year. Thermal power generated was 8546 million units, hydel generation 52.58 million units, and the nuclear power generated 246 million units. Thermal power generation has shown an increase of 24.4 per cent over the power generated during the corresponding period last year. However, hydel power generation was 8 per cent less than the same period in 1984. □

Social forestry, a way of life !

M. P. Boraiyan

Making social forestry a way of social life is the need of the hour, says the author. For this, the peoples' participation is a must. The author feels that programme should be Publicised widely to motivate people and educate them about its urgency and the benefits that will accrue to them and the community as a whole.

PARTICIPATION OF PEOPLE in conceiving, shaping, operating and thus availing the programmes of development has been heavily stressed by a galaxy of development experts in Third world In India too, in consonance with this ephasis, rural development programmes such as IRDP, NREP, TRYSEM, T & V system, Social Forestry, etc. carry the component of people's involvement in the whole gamut of planning, implementation, evaluation and modification The SIDA-aided Social forestry project, in Tamil Nadu, sponsored in the beginning of eighties, is basically a rural development programme

People's participation

Unlike a series of development programmes, Social Forestry programme is unique in character since it simultaneously cuts across diverse aspects of rural communities : their ecology, environment, climate, agriculture, livestock rearing, power structure, political participation, status of women and so on. The issue of people's participation in development programmes is more appropriate and relevant in respect of social forestry programme than in any other programmes

In as much as people's participation is a vital input for the success of social forestry programme, knowledge and awareness on the part of the people is an essential pre-requisite for the same. The experience of social forestry in Tamil Nadu for almost a quinquennium has shown that illiteracy and ignorance of the vast masses dwelling in countryside are the major impediments for its adoption in the potential village tracts of Tamil Nadu

Let more and more people know!

Awareness among people about the Social forestry programme and its performance has been found to be closely and constantly associated. Wherever there has been greater awareness among the local people, the programme has attained the maximum success on the countrary, wherever the programme showed a poor performance, a low level of awareness was found among the people This fact should facilitate the planners and policy-makers to bestow more care and attention on the education of people than on the technical and administrative aspects of the programme.

The SIDA, the funding agency of Social Forestry project in Tamil Nadu has stated in clear-cut terms that its focus and goal is not on the lush and luxuriant growth of trees on the soil of Tamil Nadu but how many people have fully and correctly understood the concept of Social forestry and how many are favourably disposed to the idea of plantation-raising in the poromboke lands or in their private waste lands To be precise, the emphasis is on how many minds have been positively mobilised and not simply on the rosy statistics about the green plantations raised in innumerable locations.

In order to translate the above into practice, the people, most of whom are economically and educationally backward, need to be better informed of the

multitude of benefits that would flow out of aforestation. Such a knowledge would inject greater awareness among them of the imperative of raising plantations in the village common lands and other waste lands.

What are its benefits ?

1. On the maturity of every plantation, it is stipulated that the Forest Department will give 50 per cent of the revenue derived from the sale of the final produce to the concerned village panchayats where it was established. The revenue which is a windfall gain to the villagers would in most cases be the biggest source of funds at the village level and could be utilised for the development activities particularly on income-- generating investments. Non-awareness of this benefit by the local people has, in many cases, contributed for their non-cooperation and non-involvement because as compared to a host of factors that promote people's participation in social forestry, awareness of such *quid pro quo* is bound to create a significant positive impact on the rural people.

2. In order to encourage farm forestry, the project provides for the distribution of seedlings upto a maximum of 500 for the potential aspirants from weaker sections coupled with incentives for a period of two years (under the Cultivation Incentive programme). Further, seedlings are also provided to others at cost-price without any ceiling (under Tree Cultivation Extension programme) Studies have shown that most of the beneficiaries of these schemes are literates and are influential in their respective villages. Although there may be other constraints for the non-availing of these schemes, lack of information has acted as a single most impediment. Therefore, an all-out attempt to make people know about these facilities would stimulate the people for a spontaneous participation in social forestry.

As an act of preparing the ground for a greater success of the above scheme, adequate efforts could be made to find out the economics of various locally grown crops and the peasants apprised of the profitability of tree crops in waste lands over farm produced crops in the same. Further the associated advantages of farm forestry compared to crop cultivation may also be fed into their minds so that they are able to take decisions for a viable alternative.

3. Social Forestry is primarily a rural development project and the local community is both the implementing agent as well as the beneficiary. As a result, much more than natural, technical, administrative, and political factors, the human factor (local community) has been instrumental in the shaping of Social forestry plantations—successfully or otherwise. Accordingly, SIDA has categorically spelt out that local people should be given topmost priority in the auctioning of the plantations or collecting the by products. Unfortunately the operational bottlenecks gripping both the local people as well as the Forest Department have not been conducive to the weaker sections in reaping the fruits of this programme.

However, even when the auction is taken by an outsider he is requirdd to part with atleast 10 per cent of the produce (at the price fixed by the Forest Department) to the local people for their home and farm requirements. Such pieces of information would trigger off people's interest and create in them a positive disposition leading to their voluntary participation in Social Forestry.

4. Another potential area for educating people is the organisation and functioning of village social forestry committees. These committees, operating in all the plantation villages are democratically constituted and widely represented by people of all sorts with a view to lending a supportive hand to Forest officials and to actively involve other people as well as get themselves involved in the programme. These committees are purported to be vital instruments to prepare the social ground for a smooth running of social forestry programme in rural areas. The committee members have a critical role to play in terms of linking the people and officials in respect of providing concurrence for the proposed site, deciding on the choice of species, procuring local labourers, offering support in protection work, distribution of plantation by products to local people etc. Imparting of complete knowledge about these committees, to the people would certainly pave the way for generating a congenial climate in the local community.

5. The Village Social Forestry Worker who serves as a linch-pin links the Forest Department with the rural community and thereby plays not merely a vital but a critical role too. He is the field level functionary who is supposed to translate the core objective of ensuring spontaneous and willing cooperation and participation from the people in Social Forestry. Many people are not aware that he can be tapped for free seedlings, technical guidance, employment opportunities in plantation operations, specifying choice of species and expressing operational difficulties. It is only such information blended with educative contacts that will enlighten and enable the ignorant and economically anaemic masses to enhance their development potential.

6. Many a time, the misconceptions about the programmes or officials mar the involvement of people in a number of development programmes. Among factors retarding the local community giving a green singal for raising plantations in the local plain or hill poromboke lands or tank foreshores, explaining the position regarding the grazing of cattle is important. Their fear is well-grounded but they need to forgo this benefit only for a brief spell of three years, so as to allow the seedlings to take roots in the soil during this period. The forest officials could permit the local people to graze their cattle from the fourth year of any plantation. Therefore the fears of the local people need to be alloyed that they would not be allowed to graze their cattle for ever once the local tank is brought under plantation.

How to educate !

Providing necessary education or the lack of it explains, to a great extent, the way people behave in rural areas. It is true that people's participation is not forthcoming in rural areas which is emphasised time and again by the Government. The component of educating people on social forestry has, no doubt, already been incorporated by the SIDA in the form of propaganda and publicity alongside the other components viz., plantation, research and training (of officials). But experience has shown that people need to have not merely a set of information about the programme but a blend of education on the imperatives of afforestation at this critical juncture of energy crunch.

In other words, all our endeavour should be to enable the masses to imbibe the concept in its true spirit and internalise the ethos of social forestry. They should make this as an essential part of their socio-cultural milieu rather than view it merely as an economic necessity.

While embarking upon such an educational experiment caution should be exercised in not over-emphasising how the nation and its economy would be benefited by social forestry but focussing primarily on what their family|community and their village panchayat would derive out of Social Forestry. Because the current mood of the people is to care more for micro-benefits (those programmes which bring income directly, immediately and significantly to their family, caste or at the most their community) rather than for macro-benefits (to the state of the nation).

Emphasise the urgency !

To conclude, inducing people to involve in Social forestry|afforestation activities could not be expected to materialise merely by providing certain pieces of information and package of benefits Even the attempts which are intensive and educational in nature wave touched only the fringe of the problem. Alternatively what we need therefore is 'conscientization' of the masses on the urgency to afforest and to arrest deforestation on the same lines as evinced in the 'Chipko' movement gaining ground in the northern parts of India.

Conscientizing the largest chunk of population dwelling in countryside is indeed a tough task to be shouldered by a cadre of people attached to any Government department. The need clearly envisaged now is not a department of publicity or education but a movement for mobilising the minds of people. Accomplishment of such an uphill task could be performed only by a group of committed and competent workers preferably from outside the Forest Department|Government deployed exclusively for this purpose. We can perhaps, tap the genuine voluntary organisations and interested educational institutions engaged in educating the rural people. □

Pest control in Seventh Plan

A reduced reliance on chemical pesticides for plant protection and an integrated pest management approach is being adopted in the Seventh Plan to offer protection through cultural, mechanical and biological means.

The integrated approach will be in addition to judicious use of pesticides, proper water and fertilizer management and adoption of suitable agronomic practices to reduce pest population below economic threshold level.

With the ambitious production target of additional 30 million tonnes of foodgrains and five million tonnes each of oilseeds and pulses during the Seventh Plan and consequential cultivation intensity leading to more pests and diseases, responsibility of Plant Protection Organisation will increase in geometric progression and we will have to equip ourselves to meet this challenging task.

The Seventh Plan targets will mean greater reliance on high-yielding varieties and adoption of modern dryland farming technology. The rainfed crops like pulses, oilseeds, jawar, bajra, jute and cotton will need special emphasis in the future strategy for plant protection.

It will be necessary to train farmers and functionaries at the field level to spot pests and disease immediately and warn districts and central authorities. The States would therefore, help in setting up a network for quick transmission of information regarding occurrence of pests.

Plant breeders should, therefore, develop varieties which had a built-in resistance to diseases and pests

The eleven biological control centres have mass-reared biological agents which attack pests of such crops as sugarcane, rice, gram, cotton and apple. The States should collaborate with these stations to provide full benefits immediately to farmers.

Great care is needed in the selection, manufacture, handling and use of pesticides to ensure that no harm is caused to human beings or animals. An Expert Committee has been set up, to screen insecticides which has been banned or restricted for use abroad but are being allowed in our country.

Quality of pesticides has to be enforced right from the time of manufacture to their use in the fields

The existing 35 State Laboratories, half of them concentrated in three states--Tamil Nadu, Andhra Pradesh and Maharashtra can analyse only 37,000 samples per year. Pesticides consumption in the country being 56,000 tonnes, one sample per tonne would require the laboratory analysis capacity to be almost doubled.

The Centre is planning to set up five original laboratories to supplement the efforts of States. □

Creating employment through social forestry

V.N. Prasad &
Dr. L. K. Jha

Job opportunities in rural areas are limited and linked with cropping and harvesting. Social forestry can be a great help in creating more jobs directly (plantation of trees) and indirectly (forestry-based cottage industries). The author is of the opinion that social forestry could create employment of over 500 million mandays annually and reduce the influx of rural labour into the cities.

INDIA'S FOREST AREA is 23 per cent of its total geographical area. But a country should have 33 per cent of forest area for proper ecological balance. The area under forests in the country is deteriorating fast due to various reasons.

The native dwellers of the forest areas are now migrating to the urban areas in search of employment. Luckily most of them migrate during a particular season for harvesting agricultural crops and tea leaves. But if the devastation of forests continues, they may migrate to cities permanently. So the naked forset areas should be improved with quick growing species so that the native forest dwellers may go on staying in and around the forest areas and the percentage of forest area may reach 33 per cent and the perennial supply of firewood, timber, fodder and fruit may be available to the local people.

According to the statistical data, 43 crore people are living below the poverty line. If social Forestry Plantations are taken up at desired scale on all available areas viz. barren lands, waste lands, degraded forests and along the rail, roads, canals etc., it is possible to create an employment of more than 500 million mandays annually A massive Social Forestry Programme has been launched by the country and at present big Social Forestry programmes are on way in the states of Uttar Pradesh, Gujarat, Tamil Nadu, West Bengal, Bihar, Maharashtra and Madhya Pradesh with assurance from International agencies involving expenses to the tune of Rs. 4750 million and more are on the anvil. Apart from this Government of India is also financing Social Forestry Programme in 101 selected districts.

The Social Forestry Programme will generate rural employment to the tune of 7000 million mandays by the year 2000. A rural integrated development scheme based on the forest produce should be chalked out. Suitable forest trees may be taken up for plantation on barren, fallow, degraded, marginal, private lands etc. under social and community forestry schemes with the close cooperation of the local villagers.

Selection of trees

The Forest trees should be so selected so as to suit the demand of the local people. Some of them must be of fast growing species.

The villagers require trees that can yield or oil or firewood and fodder. The following fruit trees may be planted viz. Bel, Am, Katahal, Jamun, Kadam, Amrud, Ber etc. Next comes the planting of oil bearing tress like Neem, Kusum, Mahua, Karnj etc.

The following trees like chakundi, Gamhar, Sissoo, Simal, Asan, Arjun, may also be planted to meet their demands of firewood and to produce tassar cocoons.

There is an urgent need to improve their socio-economic conditions and for this purpose the follow-

ing forest trees may also be planted under social forestry—schemes like those of Palas Kusum, Mulberry etc. for the production of silk cocoons and lac. The tribals are very much interested in rearing insects of lac and Tassar. These Forests will enormously improve tribals economy. Tuft of sabai grass may also be planted on the berms of the trenches and agricultural fields. After two years of planting it is harvested annually. For rope and paper manufacture this grass is in great demand and rural people can sell this produce in the local markets.

Bamboos may also be planted. After four years bamboos start giving culms. Bamboos are in great demand for manufacturing paper. Bamboo today forms about 67 per cent of the raw materials used by paper mills. The area under bamboo is estimated to be about 10 million hectares. Ber, Sabai, grass, Arjun, Mulberry and Bomboo if planted on private lands of tribals will greatly improve their economy and they will not escape to urban areas for livelihood.

Eucalyptus is in great demand for the paper pulp and rayon industries. Mill owners of Karnataka are prepared to make advance payments everywhere to growers until the tree is ready for harvesting in 5—8 years. One acre of Eucalyptus when ready for felling can fetch up to Rs. 40000. As a result many farmers in Gujarat have started growing Eucalyptus instead of food crops. This species may easily be planted on the bunds of agricultural fields and the species is, felled after every five years and will fetch a good amount of money and the tribals and other worker sections of the rural people will be benefited enormously.

Cottage industries

The following forest based cottage industries may be started in rural areas to hasten to improve the rural economy. Ornamental plants can be planted in blocks or in field, bunds marginal lands and the compounds and thereby a good profitable business of honey may be carried out by devoting a little time and best efforts. In one box, honey may be collected to the tune of 10 kg and hence number of boxes may be multiplied according to the convenience, demand, and production. Rearing of mulberry and tassar cocoons or the production of cloth, bed sheets, etc. The worms are reared mostly on the following trees like those of Asan; Arjun and Mulberry. This is also a profitable business and in villages some spinning machines may be provided. Many tribal boys and girls are engaged already in this trade. These youngsters earn Rs. 10 to Rs. 15 per day and remain in their own villages.

Planting of bamboos, canes may also be started in massive manner and rural people may be engaged in making baskets, mats, cycle carriers etc. which are in great demand. In many villages of Bihar this scheme is in practice.

Wherever this scheme is carried out, the rural people are happy because they get work in their own villages.

Similarly by planting Saijana (*moringa oliefera*) and August (*Sesbania grandiflora*) can be lucarative. Wood of these species are good for paper, pulp and the flowers and fruits are also eaten by people. These trees are fast growing and can very easily be propagated by planting in the compound, field bonds etc. leaves of saijana are used for making curry and are fed to cattle. According to one estimate about 5 thousand persons can get full year employment in the cottage industry of pulp making after 6 years of planting.

Similarly cottage industries like Bidi making, saw Mills, Carpentry toy making from *Hollorhena antidysentrica,* tanning industry from bark of Babul, gum resin, and match box and splint making should be encouraged.

Thus the abovementioned forest based cottage industries will raise the rural people above the level of grinding poverty and the rural folks will not migrate to urban areas in search of employment for their livelihoods. Hence the Government and the voluntary agencies should instal suitable hand run machines and provide loan and technical know how that they may become self-dependent and then the country will prosper. The improvement in rural areas can only be brought out by carrying out massive tree planting under social and community forestry schemes. In right earnest way and also by opening of various kinds of cottage industries based on forest produce at the same time forest personnels in collaboration with rural people will have to play an important role in order to make the schemes success. □

More benefit under IRDP

During the Sixth Plan period, more than the targeted 15 million households are said to have been assisted under the Integrated Rural Development programme (IRDP). By the end of February 1985, the tally was 15.6 millions. The Seventh Plan Approach Paper speaks of the package of anti-poverty programmes being continued at an accelerated pace. The coverage is expected to be 25 million families at 1,000 in a block every year. The studies have revealed that 47 per cent of the beneficiaries were able to cross the poverty line and that the assistance provided has resulted in a progressing shift in rural income in respect of 51 per cent of the beneficiaries. According to a Reserve Bank Report, the gap between the number of rural artisans trained and those who set up enterprises of their own has been widening year after year; and the accent during the first two or three years of the Seventh Plan period should be on mid-course correctives rather than mere quantitative expansion. □

On popularising agro-forestry

S.S. Sagwal

A sound and appropriate extension programme is a pre-requisite for agro-forestry to make an impact on the rural economy, says the author. Without this the people's participation cannot be secured and the programme can hardly produce the desired results. How to popularise this programme? For this the author suggests various measures.

AGRO-FORESTRY IS GAINING a fast momentum these days. It can play a vital and major role in the economy of farmers. Today, the continuing devastation of our forest wealth poses a severe threat not only to the ecosystem but to the civilization also. The indiscriminate felling of trees, mismanagement of land and over-grazing are leading to the destruction of forests which in turn results in natural hazards like drought, storms, flood, soil erosion and ecological imbalance. Due to want of land for growing forests traditionally, agro-forestry can solve the problem of extensive forest resources. Under present conditions, agro-forestry can meet new challenges, if it is adopted properly by the farmers. It cannot be implemented in a proper way until and unless the forest scientists vis-a-vis the farmers come forward to face the challenges of this new field of forestry.

There has been some awakening, arising out of recognition that forestry is an integral part of our cultural, social, economic and productive activities, and that the steadily increasing deforestation has a very grave and far-reaching negative impact on the country's environment and the people as a whole. But the restricted awakening found among a few elites only is not sufficient to prevent progressive denudation of our meagre forest cover and to reverse the trend towards rebuilding the resources. Our existing forests are woefully inadequate to create any significant impact on a fast deteriorating situation. The hopes lie in agro-forestry which comes into picture but there is a strong need to have a good plan for extension programme of this venture.

Extension service, a must?

This requires a sound and appropriate extension agency and|service. In a democratic country like India, any programme|project which does not aim at educating the people to secure their participation and involvement cannot finally succeed and can hardly be expected to produce desired results. In other words, education of people is a primary and major factor to intimately involve them in accomplishing the agro-forestry programmes. This all can be achieved through some sound extension approaches.

Extension Forestry which is in vogue denotes extension of forests or tree plantation whereas Forestry Extension Education lays stress on the education of people for conservation, protection and development of forests. Forestry Extension Education aims at three main types of changes in relation to forest resources—

(i) What people know —Knowledge,
(ii) What they can do —Skill, and
(iii) What they think and believe —Attitude

All these changes can very well be predicted through a sound approach of forestry extension education for agro-forestry.

The adoption behaviour of farmers for agro-forestry depends upon the following determinants :

(i) Social participation,

(ii) Education,

(iii) Value orientation, and

(iv) Socio-economic status

How to conduct extension service?

The Extension Education programmes of agro-forestry can be conducted in the following ways:

(1) Extension Activities—All the activities of agro-forestry extension can be performed through—

(i) *Visual Aids.*—These activities should be taken in agro-forestry extension programme in preparation of pamphlets, displaying cards, sign boards, flannel boards folders, charts, posters, documentary news-letters, cinema slides and advertisements through newspapers|magazines. In pamphlets, the major head-lines of different methods of propagation, exploitation and utilization of different agro-forestry species should be printed and then distributed amongst the officers| officials, foresters, farmers etc. The main aim of displaying cards is to refute the idea about a particular agro-forestry species. Such cards should be put for exhibitions and for preparing greeting cards. The sign boards must be prepared to give idea for longer period These may be used in depicting uses and purposes for a particular thing about agro-forestry. The sign boards are used for placing them at public places such as Bus Stand, Railway Station, Markets, play grounds. The flannel boards are pre-pared to disseminate the idea of advanced stage of agro-forestry field. These types of boards will also be used frequently to display the important photo-graphs, pamphlets, cards etc. The folders should contain all possible information about a particular agro-forestry species|crops. These will serve as a ready-made information about agro-forestry species for farmers and foresters.

To create consciousness amongst children and young school going boys and girls, different types of charts should be used. These charts should also be utilized to be exhibited during melas|festivals on the same pattern as is done in agriculture and horticulture. Some new ideas|slogans may also be depicted to refute the current idea|information|message. For giving wider publicity, different types of posters should be pre-pared. These should be pasted on the walls in those places where gathering of visitors is very large. Small newsletters i.e. monthly|quarterly|half yearly|annually should be proposed and the news regarding recent developments in the field and replies about different species should be given through such letters and similarly cinema slides should be prepared for the purpose of publicity in the public. The publicity media of newspapers and magazines should be effectively utilized to cover the loopholes of other methods.

(ii) *Audio Aids*—Two main audio aids should be considered for the planning of extension program-me of agro-forestry, (a) Radio|Transister, and (b) speeches|debates. Radios|transisters are most effective media of audio-aids. Radio talks must be made effective for the purpose from time to time. Speeches and debates at public places and in schools on special occasions should be conducted to create consciousness amongst people and particularly in school going boys and girls.

(iii) *Audio-Visual Aids*—These aids are most effective in response. The audio-visual aids could be television, film-shows, documentary films, dramas and VCRs. Television is the most effective media these days. The emphasis should be laid on making the idea more valuable by arranging talks on different aspects of agro-forestry. Special film-shows must also be organised at the public places. This will create more impact on public. Also, some documentary films should be produced on the subject|field regarding its proper and wide advertisement. These documentary films should be shown to public before or during interval of film-shows. These types of films can also be shown through television Dramas have more impact on public thinking These dramas may|should be organised during melas|festivals For this purpose, some video films can also be prepared. This is the modern audio-visual aid.

(2) *Training Activities.*—Training of officers|offi-cials and the receivers (farmers, orchardists, foresters etc.) may be an important and integral part of the programme. Proper training of farmers as well as the officers (extension workers) is assumed to be the base for success of any programme like agro-forestry. These activities should be followed by proceeding with workshops|seminars, short-term training, camp train-ing, training of raising plant nurseries, demonstrations, adopting training, visit systems etc. The workshops seminars should be organised frequently in the field of agro-forestry These types of activities must be carried out before the start of planting season, cele-bration of Vana Mahotsava, etc. The short-term training of officers|officials as well as farming com-munity and the persons engaged in different organisa-tions should be given for 7 or 15 days. The trainees should be taken round the small scale industries based on agro-forestry after the completion of training. After completion of their formal degrees, the students should be given practical training by organising different types of camps. These camps should be organised in the villages. Also, such trainings|camps should be the integral part of their academic career.

A training programme on the latest techniques of raising plant nurseries, their management, etc. should also be organised. Along with this training, trainees should also be apprised of the latest methods of planting-out. As the receivers are generally illiterate, there will be an urgent need to convince them to adopt new concepts of agro-forestry. The 'Demons-tration Plot' should be established so that the

(Continued on page 15)

Tardy implementation of IRDP

M.S. Chandakavate

In an evaluation study of the working of the Integrated Rural Development Programme in Sindgi taluka (Karnataka) by the Planning Forum of G.P. Porwal College Sindgi, the findings show that the IRDP has hardly made a major dent on the poverty and living conditions of the beneficiaries. Nevertheless, says the author, the programme is laudable and, if implemented faithfully, it will prove a boon for the rural poor and work as an instrument of social change.

THE INTEGRATED RURAL Development Programme is a major anti-poverty programme implemented during the Sixth Five Year Plan. It is basically a beneficiary oriented programme to bring the target groups above poverty line. The target group under the programme consists of the poorest among the poor in rural areas. The programme provides them loans and subsidies to acquire productive assets, technology and skill to make their economic activities viable. It aims at ameliorating the poverty of vulnerable sections of the community in villages.

It is imperative to assess whether such a programme, determined to change the lot of millions of rural poor is implemented properly and yielded desired fruits ? Keeping this point in view the Planning Forum of G.P. Porwal College Sindgi undertook the study of evaluation of I.R.D.P. in Sindgi taluka with the following objectives :

(1) To review the progress and identify shortcomings|deficiencies, if any, in its implementation.

(2) To ascertain its impact on rural poverty and living conditions.

(3) To provide the necessary feedback to the block and district authorities in charge of the programme.

(4) To create a plan consciousness among the students by involving them in planning process.

This study is confined to Sindgi taluka of Bijapur district in Karnataka. The Sindgi taluka is a land of perpetual famine and abject poverty. It has a total geographical area of 2168.5 sq. kms., and a population of 2.2 lakh inhabited in 141 villages according to 1981 census. About 21.61 per cent of total population belongs to Scheduled Castes and Scheduled Tribes. For the purpose of the study a special field survey of 300 beneficiary families scattered in 13 villages, of whom 125 belonging to SC, assisted during 1981-82 was conducted. The survey was carried out with the help of the comprehensive questionnaire during March, 1984.

The extensive discussion with the beneficiaries provided valuable insights in the implementation and impact of the programme.

The results of the study show that the programme had hardly made a major dent upon the poverty and living conditions of the beneficiaries. Out of the total 300 families surveyed, only 12 per cent of them were able to cross the poverty line, 36 per cent have been marginally benefited as their family income between pre-benefit and post-benefit period slightly increased. They were moving up from the lower decile group to higher decile group even below the poverty line. The programme has not made any positive impact on the income of the remaining 52 per cent of the families. On the basis of these figures one could not resolve the

failure of the programe. Because it would not be reasonable to expect that the beneficiaries under the target group who were steeped into poverty on account of their deficiencies of resources, skills, and other known social economic handicaps could be made viable within a short span of two years or by advancing them just two to four thousand rupees.

Loopholes of IRDP

A major deficiency of the programme is that it was not based on decentralised micro level planning. It was imposed by the district|state level organisation. As such in few cases the scheme has not been formulated in consultation with the beneficiaries concerned and the projects were not appropriate to the inclination, management capability, skill of the households, and local endowments. Such house-holds could not manage the affairs and were forced to sell or transfer their assets. Nearly 20 per cent of the surveyed families sold their assets. Half of the beneficiaries supplied with sheep, bullock and cart 16 per cent of the buffalo holders sold out their assets.

The identification, selection of suitable families for assistance and their categorisation was found defective. The formal discussion with the beneficiaries revealed that about 7 per cent of the families surveyed were ineligible as they were above poverty line. These families had either government|private job holders or big land owners as members. Some small and marginal farmers were categorised as landless labourers. Further different persons of a family were assisted under the same programme treating them as separate families. Bankers were not participated in the identification of the beneficiries

It was observed that the entire process of I.R D.P. has been stopped at the stage of supplying of assets to the beneficiaries. No regular visits, follow up and extension services were carried out by bankers and block officials. The periodic entries recorded in the Pragati Pustak were found false and unrealistic.

Another drawback of the programme was the failure of the government to provide infrastructure like marketing, medicine, veterinary services, fodder, transportation, etc.

The other shortcomings

The programme has not covered the entire spectrum of the activities in villages It is heavily biased towards milch animals. Buffaloes were supplied to 42.4 per cent of the total beneficiaries in 1983-84. The ancillary activities like piggery, fishery, poultry, sericulture, horticulture, forestry etc , have not received due encouragement.

A scheme of milch buffaloes which received major emphasis in the programme had an unsatisfactory picture. An enquiry about the failure of the scheme revealed some problems.

A sudden increase in the supply of large number of buffaloes in a small village had no corresponding demand for milk. Due to lack of infrastructure and their own problems, beneficiaries were unable to sell the milk in nearby towns. So they were caught into a whirlpool of troubles that neither they could sell nor consume the entire milk themselves. The conditions of the scheduled caste families were still worse as the demand curve for their milk was highly inelastic. Most of the buffalo holders were landless agricultural labourers and have no home grown fodder. In view of their extreme poverty, general shortage and high price of fodder they could not afford to feed the animals. Absence of cattle shed or shadow, veterinary services, green fodder, were the added problems. The poor maintenance resulted into short location period, low yield, disease and decease. It is revealed by the field study that two-third of 214 buffalo holders have not benefited by milch bufraloes. The finding shows that 29 buffaloes died, 36 sold or transferred to somebody else, 54 buffaloes were not milking due to the death of their calves at earlier days of lactation and another 21 buffaloes due to poor maintenance and other reasons. The other one-third of the buffalo holders were quite happy as there was improvement in their income and daily diet.

The tardy implementation

The programme instead of being a time bound and regular exercise tended to take speed according to the interest and attitude of the persons in charge of the programme. There seems a sudden spurt in the sanction and disbursement of the loan at the fag end of the financial year or whenever political pressure was there Such a sudden spurt might result in the deviation from the original programme and tends to generate inter or intra-sectoral imbalances and aberrations. Further there were no regular Gram Sabhas, (Village assemblies), credit camps and review committee meetings as stipulated. No systematic and up to date records and information about the implementation of the programme was available with the block office as some bankers were directly sending information to D.R.Ds. without intimating the same to the block authorities It was also realised that there was lack of coordination among bankers and block officials.

Another shortcoming of the programme was less emphasis on the SC|ST families As per the information supplied by banks it was clear that the share of these families in total number of beneficiaries in 1983-84 was 25 per cent though the target was 30 per cent.

The concept of poverty line used by government was also old and out of date. In prescribing the poverty line instead of taking the per capita annual income of Rs. 912.00 as redefined by the Planning Commission it used old prescription of only Rs. 720.00.

The positive picture of the study was grand success of ISB sector. All village artisans, business|servicemen

improved their activities and were better off compared to pre-benefit period.

Poor recovery performance

Another unpleasant aspect of the programme was the poor recovery performance. It was revealed that 6 per cent of the beneficiaries fully repaid their loan, 36 per cent of them have not repaid at all and remaining beneficiaries have partly paid The rate of recovery among the surveyed villages varies from the lowest 3 per cent in Vibhutihalli to highest 42 per cent in Tawarkhed. The block authorites have not made a serious efforts for the recovery of the loan. However the existence of wilful defaulters in many instances cannot be ignored.

Some of the suggestions that emanate from the findings are :

1. Due care and realistic thought should be given in identification of right type of families The personal contact and intimate knowledge of the target group will be more useful than revenue records.
2. There should be a decentralisation of planning process.
3. The redefined poverty line should be used. The share of SC|ST families and women in the beneficiaries should be in accordance with the plan.
4. There shoud be a healthy inter-sectoral and intra-sectoral balance to avoid a heavy reliance on any component.
5. Rate of subsidy and insurance premium should be uniform to all the poor to make the programme secular.
6. Government should provide necessary infrastructure. Recovery measures and other follow-up works should be intensified.
7. Steps should be taken to achieve coordination among bankers and block officials. This programme should be integrated with other welfare programmes.
8. There is a need to encourage wider public participation. The planning forums can be involved in various aspects of the programme.
9. Insurance for the death of a calf and single or few milch animals in the flock may be worked out.
10. A civic sense and responsibility among the public should be created. People's organisation should be encouraged. The people in rural area should be made to realise that government supports the active and optimistic and not the lazy and aimless persons.

The task of economic emancipation of these sections is stupendous and complex, and beyond the capacity of a single agency including government. There is a need for active participation, whole hearted support and dedicated effort from many official, quasi-official and non-official agencies in this endless crusade against poverty. The I.R.D.P., if implemented in right perspective, will prove to be a boon to the village poor and instrument of social change.

(Continued from page 12)

farmers|foresters may see and believe it. This should be worked out on the basis of extension approach "Seeing is believing". The demonstrations can be of following nature, (a) demonstration of different agro-forestry approaches for different species|individuals, (b) demonstration and plots of different planting models of different agro-forestry species, (c) demonstrations of different stages of exploitation of different agro-forestry tree species and their use to the maximum extent, T & V system, just like agriculture should be implemented for extension programme of agro-forestry. This new selected approach from all socio-economic groups aims at reaching large number of families quickly with well identified technical message covering the entire assigned area (Singh, 1981).

(3) *Other Activities.*—In addition to the above, some other activities can also be organised for extension programme of agro-forestry. These activities could be : (i) setting up of sale centres, (ii) publications, (iii) exhibitions, (iv) Kisan|forester's mela, and (v) setting up of volunteers clubs|forums. For making this programme effective, there should be provision of sale centre in the organisation to help the farmers| foresters for seeds, pesticides, insecticides, farm equipments, seedlings|saplings etc. Emphasis should be given on publications of books, journals, newsletters should be started depending upon the conditions and financial position. This literature can be sent to other institutions|universities.

The following types of exhibitions can be set up at the centre · (a) permanent exhibits (a museum should be set up), (b) temporary exhibits such as during some State|local melas etc. Kisan melas should be organised during sowing|planting season such as (a) monsoon, and (b) winter season. Some clubs| forums having young persons, educated unemployed persons should be enrolled on voluntary basis to enhance agro-forestry programmes. □

A missing link in rural development

Vigneshwara Varmudy

So many schemes of rural development have been planned and implemented but results have not been very encouraging. The author feels that one of the major bottlenecks in the implementation is the lack of communication. Government should utilise all the media to the maximum to publicise its development programmes and to inform and educate the rural masses. This only will help quicken the pace of development. The author also suggests some measures for this.

Four-fifths of the country's population lives in villages and majority of the villagers is poor. A 'real' growth of the country is possible only by developing these villages. Government has started several important schemes like CDP, SFDA, MFAL, CSRD, Antyodaya, NREP and now IRDP. But these programmes have failed to gain the required success.

Among the several drawbacks, lack of communication is one. The Government introduced a variety of programmes for the uplift of rural poor but the required correct information about these programmes, their benefits doesn't reach the villagers. Because of this 'communication-gap' majority of the programmes die immediately after their birth and if they survive the beneficiaries are usually the rural rich, who are better educated. This not only helps them to dominate the economic activities of the area but also makes them politically powerful. whereas poorer sections, in turn, remain passive, ill-organised and therefore in perpetual poverty. This is the basic structural problem which makes all new schemes for rural development ineffective

Communication gap

The media and communication in India are still seen largely as tools for entertainment or propaganda, their potential in stimulating development remaining largely unrealized. The new TV expansion programme was to cover 10% of the population in 339 districts by the end of the Sixth Plan But the problem here is that even if it covers a small part of the rural areas, more programmes concentrate on entertainment rather than on rural development. Similarly, broadcasting stations hardly devote 5% of broadcasting hours to educational purposes and rural development. Programmes on rural development are not up to the required level

Even the newspapers largely concentrate on urban development. With over 5.75 lakh villages in the country speaking different dialects of more than 16 major languages, the mass media—even where it has access cannot exert much influence. Only 6 to 10% of newspapers reach rural areas, and only ten percent of radio receivers are in the villages. Cinema and TV are largely restricted to the urban areas.

What causes imbalance

The contents and messages in the mass media are of little interest and relevance to the village folk. The newspapers, radio or TV coverage of rural problems, science and technology is scanty and sketchy, coming nowhere near scientific, interpretative, or filed based reporting—Readable or chatty socio-economic and technological surveys, participatory discussions or analyses are few and far between. Several experts therefore consider the quanti-

tive and qualitative inadequacies as serious constraints on the use of mass media for technology transfer and rural development'. (A. A. Reddy, in Rural Development and Communication Policies p. 66). Thus there exists an imbalance between the urban and rural areas and majority of the rural development projects and programmes go ahead without any help from media. Normally the planners concentrate on physical and economic factors, while the human element is ignored.

Bridging the gap

What actually happens is, the people often lack the information they need to cope with new situation, while on the other side, the Government does not get the information that they need on people's needs, priorities and possibilities, which already indicate that the development and communication are out of gear. Thus we can see we have the media used without a development purpose and on the other, we have development action without media or communications support. This 'Gap' hampers in finding out what is really happening at grass-roots level.

And how to do it

To overcome this 'Gap' and to gain the prospects in the existing rural development projects and programmes the following suggestions will be made useful :—

(1) AIR should increase its volume of time for broadcasting the rural development-oriented programmes in national as well as regional languages so as to carry them to the rural poor. Programmes must be based on the interviews with the rural poor, and information concerned with the agricultural and allied activities in its broadcasting.

Every Panchayat should be provided with a radio by the government. If the programmes are informative and useful they will attract people.

(2) TV Transmitters should cover the whole country. High power TV Stations should be established. Majority of the TV programmes must be devoted to rural development and here again the Government should provide at least one TV set to each village. The programmes should be based on interviews with the rural people from different regions and in local languages. These programmes can be made available in regional or local languages at least once in 10 days. Thus the people of each region can understand the local or regional problems and the alternative solutions for those problems. These programmes will definitely increase the skill of the rural poor and it will help them to adopt new techniques and ideas in cultivation.

(3) Newspapers can be used as a means of improving the rural conditions by publicising the development-oriented programmes and their benefits in regional languages. These newspapers should provide sufficient columns for the ideas and needs of the rural poor. This will help the policy makers to know about the requirements of the people and thereby they will plan accordingly.

(4) Small-scale media such as film strips and casettes can help a village worker to reach large numbers at the same time, and add punch, authority and credibility to his message. They provide the attraction of novelty and entertainment.

The mere arrival of the projector in a village may be exciting Even Audio-Visual media can provide concrete illustrations of the unfamiliar, squeeze an entire year's farm work within a short period of time. This media helps in freeing the peasants from rural isolation.

(5) Low-cost media such as flannel-graphs, posters, silkscreen prints, cyclostyled news-letters, slides or traditional media from puppets to dance drama can be prepared locally by grass-roots workers or villagers using cheap local materials.

Thus the place and role of communications and information in the new approach to rural developmet is of vital significance. For success, it is essential to choose the correct medium for the situation and to frame the message carefully so that it correspondents to peoples real needs and can be easily understood by them. Good communication helps the planners to find out what people's needs are. Thus properly conceived rural development support communication can reduce the costs and speed up the pace of development helping to boost production in farms and workshops, improving levels of education, health and nutrition, stimulating self-help and contributing to the values of equality and participation in development. Communication should not be, as it so often is, a missing link in the rural development process. □

Crocodile farming in rural areas

The Government of India have set up a network of 16 crocodile-rearing centres with the assistance of an FAO project, that is designed to demonstrate the potential of crocodile skins as an important source of rural income. The project is also providing technical assistance and training at various centres in breeding techniques, planning, and management of crocodile sanctuaries. More than 40 technical officers have been trained, and more than 150 village community representatives have been acquainted with crocodile-farming techniques. An experimental farm established in Tamil Nadu is serving as a central training Institute for further promotion of the programme in the villages of the country.

This persisting discrimination against women !

Dr. (Ms.) D. Radha Devi

An overview of the level of education of the female population and the employment of educated women in India is presented herein to draw attention to the approach and evaluation of the development of education by the Government of India as can be discerned from the five year plan documents. The author calls for special efforts to plan for speedy employment of educated females and to see that the mistakes of the past are not repeated.

FORMAL EDUCATION BESIDES being necessity for its own sake is sought to earn a means of livelihood. The expenditure incurred in education is investment in human capital. It is expected that the level and type of education would influence considerably the occupation a person is in. The type of occupation determines, leaving aside distortions due to market imperfections and influence of other factors, the earnings of the working force. Besides this direct individual effect the overall technical development of a nation depends upon the utilisation of the educated manpower. In addition, education and employment of women have direct bearing on population control policies as well as policies for the uplift of women This paper, therefore, proposes to present an overview of the situation relating to the level of education of the female population and the employment of educated women in India. It also draws attention initially to the approach and to evaluation of the development in India of education by the Government of India as can be discerned from the various Five Year Plan documents. This is done only to draw attention to the official awareness of problems relating to educational development.

Since independence India was making a determined effort for overall development. In all the Five Year Plans of India the role of education in shaping the economy has been stressed. According to the First Five Year Plan, "education is of basic importance in the planned development of a nation. The educational machinery will have to be geared for the specific tasks for which the nation sets itself through the plan so as to make available in various fields personnel of suitable quality at the required rate. The educational system also has an intimate bearing on the attainment of the general objectives of the plan inasmuch as it largely determines the quality of the manpower and the social climate of the community .." (First Five Year Plan 1952).

In the Second Five Year Plan it is said that "economic development naturally makes growing demand on human resources and in a democratic set up it calls for values and attitudes in the building up of which the quality of education is an important element" (Second Five Year Plan, 1956). It further states that "in each sector of development technical personnel are needed in rapidly increasing numbers ....." It adds that "during the past two or three years increasing attention has been given to planning for manpower".

But the Fourth Five Year Plan sounds a disappointing note when it states "the expansion of numbers (of educated persons) has however, been accompanied by a certain amount of deterioration in quality. The Indian educational system has not been sufficiently geared to economic development especially at the primary and

ndary levels, insufficient attention has been paid ocational and agricultural education. It is obvious in the immediate future larger and more effective ıtion has to be paid to factors like consolidation, ity, diversification, terminalisation and work orition than has been the case so far". (Fourth Five r Plan, 1966). The document also states that the has the intention to remove the deficiencies of existing educational system "which have developed onsequence of rapid expansion during the first plans".

he Sixth Five Year Plan document states : "in the s of secondary and higher education facilities been expanded during the last three decades. etheless, the reforms for qualitative improvement system reorganisation as envisaged in the National cy on Education (1968) are yet to be completed tively. This is particularly so for the integration ractical aspects in the educational programmes for the planned growth of programmes directed rds gainful employment to be implemented in co-operation with all the developmental agen- Intersectoral linkages are yet to be brought about coordination established between work places, ols and developmental activities for fostering apriate manpower development programme" (Sixth Year Plan, 1981.)

It may thus be seen that the Government cannot be faulted as far as its broad perspective about the subject is concerned. What is proposed here is a presentation of the overall position relating to female segment of the population of the country in relation to educational level and employment.

Level of female education

Leaving aside the aspect of under re-numerations, the female population of India excluding that of Assam, according to the Census of India 1981 is 321 million. Of this, those who are expected to be literate as per the recommendation of the United Nations are those above 10 years of age (Shryock and Siegel, 1971). Such a segment numbered 235 million or 73 per cent. The female age—specific literacy rate for 1971 and 1981 is given in Table 1.

The figures in Table 1 highlight (i) the failure in providing universal education to these below 14 years of age, (ii) the wide rural-urban disparity and (iii) the improvement in rates of the younger cohorts compared to the older ones.

It can be seen very clearly that only a negligible percentage of the literate females have qualifications beyond matriculation. The situation in urban area is slightly better than that in rural areas. Those belonging to the group 25 years and below do not reveal any considerable improvement in educational attainments commensurate with the number of years utilisable in education though they were born after the commencement of the First Five Year Plan.

TABLE 1

Female age - specific literacy rate, 1971 and 1981.

Age Group	Rural		Urban		Total	
	1971	1981	1971	1981	1971	1981
All ages	13.08	17.96	42.05	47.82	18.70	24.82
5—9	13.54	19.63	42.62	48.36	18.90	25.79
10—14	29.83	36.44	70.97	73.39	38.16	44.85
15—19	28.31	33.66	69.42	70.40	37.66	43.28
20—24	20.03	27.16	58.89	65.16	28.69	37.18
25—34	12.47	19.64	46.59	56.98	19.29	28.96
35+	6.47	8.62	30.18	35.91	10.75	14.44

Source : (1) Census of India, 1971, Series I—India, Part II—c(ii) *Social and Cultural Tables.*
(2) Census of India 1981, Series I—India, Part II *Special Report and Tables based on 5 percent sample data*

Thus repeatedly in every plan document we find statement of the need for educational planning, achievements and deficiencies of the previous plans highlighting the fact that education is not geared to development and to meet the manpower demands. The emphasis on quantity has "led to an undersirable growth of facilities for general higher education especially at the undergarduate stage in arts, commerce and humanities and in the consequent increase in the incidence of unemployment among the educated" (Sixth Five Year Plan, 1981).

The position regarding level of education is presented in a different way in Table 2. This table gives the percentage distribution of the total female population by educational attainments. Overall, the scenario of women's level of education is quite depressing.

TABLE 2

Percentage distribution of female population by level of education and place of residence, 1971 and 1981.

Level of Education	Rural		Urban	
	1971	1981	1971	1981
Illiterate	86.83	82.04	57.86	52.18
Literate without educational level	5.20	7.07	13.60	12.39
Primary.	5.76	6.73	13 03	14.15
Middle .	1.67	2.70	8.43	9.08
Matriculation/higher secondary	0.45	1.27	5.75	9.23
Non-technical diploma/certificate	0.04	0.01	0.06	0 06
Technical diploma/certificate	0.01	0.04	0.11	0 16
Graduate + .	0.04	0.13	1.18	2.75
Graduates non-technical	...	.	0.75	1 84
Post graduates-non-technical	..		0.21	0 51
Technical Graduates and above	...		0 22	0 40
Engineering & Technology			0.01	0 01
Medicine	.		0.05	0 07
Agriculture, Veterinary, dairying	..	...	0.00	0 00
Teaching	..	..	0.15	0 37
Others .			0.01	0 00
Total (actual number)	213,725,732	247,553,652	50,384,644	73,803,766

Source : Same as Table 1.

Note : Break-up of graduate and above is available only for urban population.

Employment vis-a-vis education

When the total literate female were separated into workers, marginal workers and non-workers it is seen that 8.77 per cent belong to main workers, 2.89 per cent belong to marginal workers and 88.34 per cent to non-workers. Similarly literate women accounted for 15.56 per cent, 12.44 per cent and 27.34 per cent respectively of main workers, marginal workers and non-workers.

The situation at a more disaggregated level, that is work participation by level of education reveals that there are those with even very high educational qualification who remain unemployed as shown in Table 3. Those with levels of education of middle school and below can show high levels of unemployment because they include the young ones. Besides, their unemployment need not cause worry from the point of view of wastage of resources spent in education. The reason is that it is necessary to provide a minimum level of education to all people because such education is a necessity and education upto the middle level is the minimum that should be provided.

TABLE 3

Female work participation rate by level of education, 1961.

Level of education (Literates only)	Work participation rate (%) as Main Worker	Marginal Worker	Total
Literate without level of education	6 93	2.77	9 70
Primary	8 54	3 85	12 39
Middle	6 46	2 65	9 11
Matriculation/secondary	11 46	1.69	13 15
Higher Secondary/intermediate/pre-university	9 50	0 85	10 35
Non-technical diploma/certificate	46 78	1.72	48 50
Technical diploma/certificate	65 08	1 88	66 96
Graduates+	34 01	0 86	34 87
Separately only for urban area for the category graduate and above:			
Graduate non-technical	21 05	0 48	21 53
Post graduate-non-technical	32 82	0 42	33 24
Engineering and technology	45 29	0 38	45 67
Medicine	72 14	0 86	73 00
Agriculture and Dairying	43 17	.	43 17
Veterinary	43 37	..	43 37
Teaching	57 70	0 38	58 08
Others	44 70	2 21	46 91

Source : Same as for (2) of Table 1.

Of the educated non-workers it is not known as to how many are willingly unemployed and how many are otherwise. In any case those with involuntary unemployment, most likely the majority, embody precious resources invested. Neither the individuals concerned nor can the government afford to keep these persons idle. Therefore, a few questions in respect of them arise such as : How much of the education provided to them is socially useful ? If socially useful education was the only consideration could they have not been stopped at that stage ? What steps can be taken to prevent such idleness of resources especially when it is remembered that their places at higher levels of education like medicine and engineering could have been taken by others not much below their intelligence and who would be willing to be employed ? What are the reasons which make those with higher degrees remain unemployed ? At what stage did they opt for not working ? In this paper these questions cannot be answered for obvious reasons.

Educational level should naturally determine the type of occupation one is in. An attempt was made to study the relationship between educational level and occupational pattern of employment using data from the census of India 1971. This was done in spite of the common knowledge that because of the limited job opportunities and over supply of educated people many educated persons are misplaced in their jobs. As shall be seen in a little while the effort did not succeed but threw up an aspect of census data which should be of considerable interest to researchers and policy makers.

Occupational classification is available in census only for workers engaged in non-agricultural activities. The workers in agricultural activities are classified as cultivators and agricultural labourers only.

It is not possible to discern any relationship between education and occupation which can hold good universally. As may be seen large number of illiterates and literates without formal education are present in the modern sectors of employment. Therefore, occupational classification by eduation at the group level was examined. It was not possible to examine the same at the "family" level or at individual occupational level since they are not available. When this attempt was made the earlier observation that no firm universal relationship between education and occupation can be drawn became more apparent.

Group 02 (occupation group code) is expected to have persons who are "professionally qualified specialists in engineering and technology". Looking at the data one wonders about the professional qualifications to be possessed by individuals for being included in this group. If the majority of workers in this group are considered, the qualification required to be possessed is matriculation in rural areas and graduation in engineering and technology in urban areas. It is possible that those with diploma|certificate not equal to degree may have been included with the matriculates in rural areas because of the smallness of their number and hence not meriting separate classification. But the types of job that are included as the work of those in this group by National Occupational Classification cannot be handled even by non-graduate technical persons, not to speak of others with still lower educational levels.

The educational qualifications required for physicians and surgeons as it appears from the same data also is a source of wonder. It may also be noticed that there are some engineering graduates working as physicians and surgeons. It would appear that the other way round also is possible according to the figures presented in the data.

Further, the occupational groups are so meaningless that no useful purpose is served by such groupings. For example, the group 08 stands for nursing and other medical and health technicians. Their levels of education range from illiteracy to medical post graduation. The reason is that this group includes ward ayahs, dais, animal keepers in biological research laboratories and so on. How medical graduates and post graduates came to be included here is also a cause of bewilderment. Consider also group 15 which comprise teachers. Teachers of all types, like craft teachers, pre-primary teachers and university professors who are with totally differing levels of education are clubbed together. The group 35 relating to clerical and related workers (n.e.c) also is a classic example of the combination of various occupations, which have nothing in common. This group includes along with others office attendants like peons, dusting man, bundle lifter, daftary etc.

Conclusions

This study presented, using the latest nation wide data source, the Census of India of 1971 and 1981, the position relating to level of education and employment of women in India. It brought out once again the low level of literacy as well as the very small proportion of educationally qualified among women in India. The low level of employment of women including those of educated was brought out. The under utilisation of educated unemployed women by comparing employment by occupation and level of education could not be examined because of deficiencies in data available from the Census of India 1971 (Similar data for 1981 is not available yet).

The general policy prescription based on this study are very obvious and hence are not specifically set out here. The author however, wishes to draw attention to two aspects, one on data and the other on a possible effect of educated remaining unemployed.

The Census collects abundant data about the total population but certain tabulations are not useful either

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Mobilising youth for constructive work

Dr. P. D. Sharma

The various efforts made by public, private and voluntary organisations for all round development of youth during the International Youth Year should continue. The author cautions that we should well remember that in the absence of continuity of welfare measures for youth, the rate of increase in the number of problems the youth are facing will be far higher than the rate at which remedial measures are implemented.

THE YEAR 1985 has been declared by the United Nations as the International Youth Year. The World Body wants youth of today and their constructive role to be highlighted. The purpose of the 'Year' is to involve the people between the ages of 15 and 35 in the economic and social development as well as in the construction of peace. The theme of the 'Year' is Participation, Development and Peace.

The world's estimated population of young people is 922 million. If properly tapped, it can be a vast reservoir of energy which at present is utterly wasted. Thus several programmes for the uplift of youth are proposed and implemented the world over. For example, to highlight the Youth Problems, the Twelfth International Youth Rally was organised in Moscow on July 27th 1985. The Rally was attended by the youth representatives from all over the world. It is noteworthy to state that Russian Youth contributed their one day's salary for this rally. Keeping in view the present socio-political situation prevailing in our country, the Prime Minister Rajiv Gandhi has rightly given a call to the voluntary and social organizations in India to work for inculcating in the youth the spirit of national solidarity and integration.

Frustration in Youth

The studies carried out by UNESCO and other World organizations have indicated that there is a large number of unemployed youth. These unemployed young people suffer from anxiety, worry, loneliness, lack of self-confidence etc. They have lost confidence in their own ability and hence are frustrated. The frustration suffered over a long period becomes active and leads them in wrong directions and some of the youth turn to drugs, crime and violence. It is a sort of vengeance they wreak on the society which has been ignoring them for a long time.

Need for proper guidance

Our schools and colleges have not yet recognised the importance of guidance and counselling activity organised on a scientific basic, which requires to take into account the principles of adolescent psychology which suggests what motivational and inspirational inputs are necessary for the balanced development of youth. Thus, the guidance and counselling activity is not something that could be handled by any teacher as is presumed by many school and college authorities. It must be entrusted to the teacher who has received training in guidance and counselling techniques, who is interested in the youth and who can command the faith of the young people. Do we really have such teachers in our schools and colleges? On the contrary, there are many teachers who derive sadistic pleasure from humiliating students. It would be, therefore, extermely necessary to organise carefully planned training programmes fór student-counsellors.

Due to lack of guidance programme in our schools and colleges, lot of young people in the country are suffering from anxiety, insecurity, frustration and disappointment. They, therefore, become desperate and terrorists. To a great extent the teaching community can check this flow of young people towards such socially undesirable activities.

Role of teachers

The teaching profession has always been a very important profession. In olden days, the *guru* in India played a very crucial role in moulding society. After that there were many ups and downs and today we have come to a point when, once again, the teacher is important. Although a teacher will no longer be accepted in that whole-hearted manner in which the guru was, nevertheless he has a very vital role to play in guiding the nation.

Teachers at all levels can do a lot to guide and motivate their students through their lectures. They should realise that their role in a classroom is not merely transmission of information but to use it as a vehicle of right attitudes and values. It is up to teachers not only to deal with present day problems, which are complex and considerable, but to look into the future and try to forewarn and equip their students to meet those problems The children of today will one day be faced with these very revolutionary changes.

Potential of youth

Youth is a symbol of energy and vigour. This energy, which is a potential force of the nation, is to be geared up and channelised for creative work. For a developing country like ours, this potential force is of immense importance, as it is helpful in solving several socio-economic problems of the country like illiteracy, untouchability, dowry, corruption, etc. To face these social problems successfully various youth programmes like leadership camps, literacy classes, sports and cultural festivals, population education, peace education, anti-dowry campaign, youth rallies, health seminars, etc. can be arranged at different levels by public and private organizations.

Conclusions

In the end, let us hope that the various efforts launched by different public, private and voluntary organizations during the *International Youth Year* will not be limited to this year only. The programmes devised to improve the situation of the youth in the country must continue. We should well remember that in the absence of continuity, the rate of increase in the number of problems the youth are facing will be far higher than the rate at which remedial measures are implemented.

Using more aluminium in transport

The Union Department of Mines has set up a 20-member high powered action group to suggest measures for promoting diversified uses of aluminium in rail and road transport sectors.

The action group will recommend steps for increasing the use of aluminium in bus bodies, truck bodies, two-wheeler and three-wheeler bodies, passenger cars, military vehicles and rail coaches. An attempt will be made in achieving weight reduction by increasing the use of aluminium in bus body building, thus saving the diesel consumption without compromising with the comforts of passengers. The group will consider various technical issues relating to the use of aluminium, and its fabrication techniques and modernisation of aluminium industry.

Among the issues to be taken up by the action group are the promotion of R&D efforts for changing the design and composition of various finished products of aluminium, and identification of measures required to be taken by the primary and secondary aluminium producers for developing the use of aluminium in transport sector.

The action group will consider whether aluminium can be utilised economically for winding wire manufacture and for development of a modern three-wheeler closed body.

It will also suggest fiscal measures necessary for making aluminium and its products competitive with other metals. ☐

(*continued from page* 21)

for the researcher or for the planner. As far as education is concerned grouping of occupations with varying levels of education distorted the picture. For proper manpower and educational planning what is required to start with is an inventory of the existing situation.

In a society where female education and employment are yet to get unreserved public support the performance of those who ventured into higher education will be watched critically. A failure to get either a job or a proper job according to qualification will have a negative effect on female education by creating scepticism on the purpose and fruits of formal education. If involuntary unemployment of educated females persists for a considerable time, a considerable spiralling down of female education, more so at higher levels, is bound to occur. Those concerned should make special efforts to plan for speedy employment of educated females and to see that the mistakes of the past are not repeated. ☐

Promoting scientific interest in youth

Yojana Correspondent

THE UNION MINISTRY of Science and Technology (Department of Science and Technology) has initiated a scheme for promotion of scientific interest in youth. The programme aims at various activities like research projects, seminars and symposia basically designed to enthuse young scientists in various fields of science and technology. The programme is supported financially by the department. Besides, the Science and Engineering Research Council of the Department has recommended for evolving a new scheme to promote excellence in research with a provision of financial support to motivate young scientists.

Objectives

The scheme seeks to promote and sustain scientific interest in youth during their creative period of career. In addition, it seeks to provide opportunities to young scientists for pursuing exciting and innovative research ideas, and to provide opportunities for interaction and exchange of ideas with the scientific community.

Who can apply

The programme covers young scientists in the 18—35 years of age group. Scientists in such age group who have adequate background in any field of science and technology and show inclination to undertake an activity for the fulfilment of the objective of the scheme can apply.

Activities

Activities included in the scheme relate to encouragement projects of about two years duration requiring seed-money upto Rs. 1.0 lakhs, socio-economic development projects, seminars|symposia, awards through INSA and ISCA, contact programme with eminent scientists, and, international travel assistance. Application under the scheme can be made throughout the year on the prescribed format obtainable from the Department of Science and Technology (Science and Technology Promotion Division), Technology Bhawan, New Delhi-11006.

The other scheme

The other scheme of the Ministry of Science and Technology is Science and Engineering Research Council Young Scientists Scheme (SERCYS), which seeks to provide quick research support to young scientists to pursue their bright ideas in newly emerging and frontline areas of research in science and engineering. The programme provides for integrated research works involving inter-disciplinary fields and support to inter-institutional programme.

This scheme is open to young scientists below 30 years. Researchers and scientists who have shown promising achievement during their Ph D and|or subsequent work are eligible. Applications need not be forwarded and routed through and institutions at the stage of consideration. But once the proposal is approved a certificate of affiliation to an institute is necessary.

Duration

Duration of the project under the SERCYS scheme is for a period of two years. The total cost of the project for this period has been pegged at Rs. 2.5 lakhs.

When to apply

Application under the scheme can be made on the prescribed form twice every year, by the end of January and July of each calendar year. □

India towards 21st century

Satish C. Seth

The Prime Minister's exhortation to take India towards 21st century implies corporate entities to undertake long range perspective planning and for the individual to become an inventive and creative person. The author, a futurologist, suggests setting up of future scanning groups, devising a long range perspective plans and training and developing a forecasting groups for different organisations. He feels no dynamic and alert system can survive without paying attention to the furture. So, we should view "future" more seriously than, as tradition-bound society, we do normally.

THE ENTIRE NATION today stands enthused and feels invigorated in every sector, to take such steps which can fulfill the Prime Minister's exhortation that each system in the country should speedily usher itself into the 21st Century.

What does this really imply ? The first thing that "India towards 21st Century" implies is that we should view "future" more seriously than, as a tradition bound society, we do normally.

After all, a majority of us will be living in the "future". A majority of us individually, collectively and as a nation will be achieving things in the "future".

The question, therefore, arises · Do we know what kind of future we as individuals and as a social collectivity are seeking ?

THE ENTIRE NATION today stands enthused and feels invigorated in every sector, to take such steps which can fulfill the Prime Minister's exhortation that each system in the country should speedily usher itself into the 21st Century.

On to the next century

Thus all corporate entities have an obligation to undertake long range planning.

At the individual level it is a "call" for becoming an inventive and a creative person.

In terms of managerial culture it means that we need not constantly be backward looking. We need not wait for "events" to overtake us or to hit us while we are unprepared for future "crisis" or future "opportunity." In short, all systems from today onward should commit resources based on a long range view of the future.

The third important implication lies in developing professional groups who know how to "scan" and "interpret" the future. They have to be trained to pay full time attention to "scan" the future.

Undoubtedly today, some such activities are being carried out by a half a dozen private and public organisations in India. But not all functionaries carry out or use the right forecasting methodologies and techniques

The first basic requirement of looking into the future is to broadbase and reorganise the information and data base in a given organisation—what we now call the Management Information System (MIS).

The second thing is that each organisation should set up a group consisting of persons who are well versed in interpreting data, carrying out trend analysis, who know how to apply statistical methods, against a time frame. This group should also be well conver-

sant with systems analysis, forecasting and programming. Such a group would constitute an Early Warning System (EWS).

The combination of MIS and EWS then ideally constitutes that professional unit, which can help an organisation to draw perspective plans and to identify sector by sector the real building blocks on which each sector can intelligently, consciously, and in the context of a preferred future, move towards the 21st Century.

Preparing for all round development

In the governmental sector, its planning process provides the only vehicle of change through a five year plan.

Apparently when the Prime Minister suggests that all systems should think in futuristic terms and should move speedily towards the 21st Century, he is in unmistakable terms demanding that the professional world of this country, sector by sector, set up :

(a) future scanning groups;

(b) draw long range perspective plans; and

(c) the Indian educational and training network should have educational courses to train and develop forecasting groups for different organisations.

All this also implies that the current day investments, be they for an Annual Plan or a Five Year Plan, would be made only after sufficient effort towards environmental scanning has been undertaken

In other words, in the public administrative context, the options for the Seventh Five Year Plan would have to be based on a "vision" and full awareness of the expectations of a given system for its likely expansion and growth for the next 20 years, to encompass the time-frame of the Seventh, the Eighth Five Year Plan, the Nith Five Year Plan and the Tenth Five Year Plan. The four Five Year Plans for the period 1985—2005 A.D. do constitute the major period of "transition". Each paln should become the foundational building block for the succeeding plan to enable this nation to realise a certain preferred future for India

Secondly, it also implies that considering that our national resources are finite in nature, we need to draw up material balance statement, to examine our national requirements, to develop the infrastructure and to gear all systems to work to fulfill the tommorrow's needs of a billion Indians who will be with us in less than 7000 days.

Finally, to conclude, whatever else may be important for those who swear much too much by "past" and "day-to-day" current obligations, no dynamic and alert system can survive without paying attention to the future.

Roads to a prosperous future!

All sectors hereafter have to work in a systematic and a planned manner.

The time has come that a massive effort should be launched for three things :

Firstly, in our schools and colleges, in our universities, we should introduce formal or non-formal education in technology forecasting, technology assessment and future-related studies.

Secondly, all systems, as in Poland and in many other countries, must draw their Perspective Plan for the next 20 years. The current choices for physical and fiscal outlays should emerge out of such an analysis.

And, finaly, systems which have become too rigid and inflexible must promote a great deal of experimentation, innovation to encourage creative efforts at the individual and collective levels within the broad national guidelines.

If this is done, one should sincerely feel, that we would have taken the first few necessary steps in our long march of ushering India in the 21st Century with strength and pride. ☐

Constitution released in Sanskrit and Urdu

Sanskrit and Urdu versions of the Constitution were released on September 19, 1985 by the Union Minister for Law and Justice, Shri A K Sen. The Minister also formally released the pocket edition of the Constitution in Hindi.

The Sanskrit version has been prepared jointly by Shri M.M Dave and Shri Kashiram Sharma

Strategy to remove illiteracy

The magnitude of illiteracy in India is still significantly high and constitutes a serious handicap in the socio-economic development of the country. A new design with multi-pronged strategies will, therefore, be necessary to step up efforts to realise the objectives of achieving cent percent coverage of adult illiterates in the age group 15—35 by 1990.

The government intends to expand the scope of adult education programme by involving all educated sections of the community, students, teachers, voluntary organisations, in the implementation of the programme.

There is need to realise the extreme urgency and significance of making India a literate society; and organise activities to generate a strong demand for literacy and create the necessary momentum for mounting a mass campaign for liquidation of illiteracy in the country. ☐

Future of aluminium industry

S. C. Lahiri

Aluminium constitutes the largest among the non-ferrous metals produced and consumed in India. It is an all-purpose metal for uses in transport, electrical works, construction, packaging, machinery and equipment. However, its consumption in India is stagnant due to high costs. The author suggests rational pricing system for the inputs to make aluminium cost effective and comparable with the international level. He feels the future growth of aluminium is dependent on cost reduction through reduced excise duty and some control on price of input material.

INDIA PRODUCES 70—75 minerals other than fuel and atomic minerals but including minor minerals. Variety of minerals cover all important metallic and non-metallic industrial minerals. Mineral based industry depend on the natural resources|reserves. The endowment in India is considered sufficient in ferrous group of minerals carrying tin, tungsten and vanadium; but it is deficient in all non-ferrous metallic minerals except in respect of aluminium. India has very large resources of bauxite ranking fourth in the world (2,650 million tonnes). Aluminium constitutes the largest amongst the non-ferrous metals produced and consumed in our country. The per capita consumption of aluminium in India has been less than 0.5 Kg. as against world average of 4 Kg. Production of aluminium in India started in the year 1943 with a modest beginning of 2000 tonnes. Since then production increased significantly to 2,76,500 tonnes by the year 1984-85. However, aluminium production in India is only about 2.5 per cent of the world production. Aluminium production in India comes rom 6 smelters under four primary aluminium producing companies including one in the public sector, which have, in all installed smelting capacity of 3,62,000 tonnes per annum.

Consumption-growth rate and pattern

The growth of aluminium industry which was witnessed during the late 60's and 70's was checked recently mainly because of prohibitive price of aluminium metal when compared with other competitive materials. The consumption of the metal in India increased quite rapidly from 11,000 tonnes in 1953-54 to 2,20,000 tonnes in 1979-80, an increase of about 20 times whereas average annual growth rate has been 15.4 per cent. The offtake of aluminium during the years 1981-82 and 1982-83 reveals a state of stagnancy which showed the demand growth being suppressed. The fall in demand has been witnessed more in electrical industry.

In the early years the consumption was mainly for utensil making constituting about 50 per cent or more. Other uses were for electrical, transport and packaging industry. In the 60's the use of aluminium against copper increased its demand in the electrical industry. As a result the use of aluminium in the electrical sector rose to over 50 per cent in mid 70's and the second largest use being as household consumer durable.

Views expressed in the article are of the author and not of the Planning Commission where he works.

The table below gives the sector-wise consumption pattern of India and advanced countries :

TABLE I

	Advanced countries (%)	India (%)
Transportation	25	8
Building & Construction	15	4
Consumer & Commercial	10	21
Electrical	15	50
Packaging	10	7
Machinery & Equipment	10	2
Others	15	8
	100	100

From the sectoral consumption statistics, it may be observed that in the advanced countries the major share of aluminium is claimed by the transport, construction, packaging and machinery and equipment whereas in India the major consumer of aluminium is the electrical industry.

Domestic production and import

Till the late 60's, imported aluminium constituted a significant proportion of the total availability of the metal. Trends in the aluminium industry in India since the early 50's and to the late years of 70's indicated that substantial new production capacity was built and import was reduced. The share of import has again increased during late 70's and early 80's. The major reason for this has been the under-utilisation of capacity mainly on account of inadequate power supply to the smelters The table II indicates growth of smelter capacity, aluminium production, imports and capacity utilisation during the years 1980-81 to 1984-85 :

Future of aluminium industry

The main reason affecting the capacity utilisation during the past few years of the aluminium smelter being the non-availability of adequate power from the State Electricity Boards. While Hindustan Aluminium Corporation (Hindalco, a private sector) has installed its captive power plant, steps have been taken to insulate the smelter of the public sector unit, Bharat Aluminium Company (Balco) from the grid power by taking up installation of captive power plant. Besides plans for installing captive power plants of Indian Aluminium Company (Indal, a private sector) smelters are afoot. About Rs. 2300 crores are being invested by Government for a large integrated Aluminium Complex (NALCO) in Orissa based on the recently discovered extensive east coast bauxite reserves, which will have 2,18,000 tonnes capacity per annum smelter besides 8 lakh tonnes per annum capacity alumina plant. It has been planned to export about 3.75 lakh tonnes of alumina. The project is expected to be commissioned in 1987. The present deficit situation with regard to domestic availability of aluminium expectedly will be reversed by end 1987 or early 1988 when NALCO will be on stream. The present domestic shortage of metal will, therefore, be continued till 1987. Thus India is expected to be surplus in aluminium in about 3 years from now.

New areas of use in the world

Aluminium alloys still occupy the first place among metals in the aircraft industry. High strength aluminium alloys have also found use in missiles, satellites and other space crafts. The light stiff and strong aluminium-lithium alloys may offer a metallurgical alternative to the fighter planes (light combat air-craft) for its wings. Besides, high strength aluminium-zinc, aluminium-magnesium alloys have been developed for defence requirements. The powder metallurgy process for making strong aluminium alloys has been emerging in a big way. A number of aluminium alloys have been developed with high strength and fracture toughness with the help of powder metallurgy in the West. Super plastic aluminium alloys have also been developed for fabricating complex shapes Aluminium air battery which generates electrical energy by an electrochemical reaction, using potential power of aluminium is being developed by Alcan. Developments in automobile parts are alsc coming along e.g. aluminium brake cylinders, wheels, radiators and even suspension components

World growth forecast

The London Metals Research unit of Shearson in its annual review of the world aluminium industry emphasizes that the industry is still passing through a

TABLE II

(000 tonnes)

Year	Smelter capacity	Production Actual	Capacity Utilisation (%)	Imports
1980-81	321	199	62.0	124
1981-82	321	206.7	64.4	41
1982-83	321	208.1	64.8	19 3
1983-84	362	220.3	60.3	20
1984-85	362	276.5	76.3	50(Estt)

period of transition not only in terms of the currently depressed prices but also in terms of the long term changes in cost structure that are continuing. The unit estimates 1984 primary aluminium production to have been 12.71M metric tonnes (capacity utilisation 88 per cent) as compared with 11.07 M metric tonnes in 1983 (average capacity utilisation 78 per cent) and a depressed 10.7 M metric tonnes in 1982. In 1985, production is to fall to about 12.10 M metric tonnes representing capacity utilisation of about 83 per cent but in 1986, it anticipates an improvement taking output to 12.90 M t. As against estimated consumption of 12 56 M t. in 1984 (12.05 M t. in 1983), the consumption is expected to rise to 13.00 M t. before falling to 12.75 M t. in 1986. However, in the longer terms, Shearson believes that the outlook for consumption is encouraging. The developing countries offer scope for an increase in the intensity of use of the metal even though the rate of growth in consumption is slow. According to some international forecast, growth in aluminium consumption in the developed countries from 1984 onwards will be modest at the best. This has been caused by increase in aluminium price in relation to other metals.

Likely Indian growth areas

Aluminium is now being increasingly considered as an essential component in the automobile industry which grows at the rate of 20 per cent per year in India. The replacement of the conventional brass, copper, steel radiators etc. by aluminium can be considered. The bodies of light commercial vehicles, which are now built with pressed steel sheets should be considered for replacement in all aluminium bodies, the weight saving would be considerable. Similarly, the scope exists for aluminium auto-castings and aluminium alloy castings. Fabrication of commercial vehicles such as truck, dumper, etc. with aluminium bodies will have to be vigorously pursued due to higher payloads and lesser fuel consumption. In the railways, serious consideration should be given for switching over to all aluminium coach body and aluminium tanker body for the liquid transportation. Introduction of aluminium LPG cylinders deserve consideration. Construction of aluminium foodgrain silos would be another important potential area. In India the development of special rolled products for cladding in the Metro Railways, the aluminium truck bodies to small fleet owners and all welded high strength aluminium alloy dumper body are some of the new applications of the versatile metal.

Inhibiting factors

In the past few years even outside India, the aluminium industry has experienced its most severe and persistent crisis, with unprecedented low rates of capacity utilisation, record stocks and very depressed prices. Although there have been marked signs of improvement recently, the industry continues to experience difficulties which are clearly the consequences of structural factors on the supply side such as the availability of electricity and its cost which accounts on average for 20-25 per cent (in India it is around 45 per cent) of total production cost but with a wide range around the average. On the demand side the fall in the elasticity of consumption, the most striking feature of the 1970s continued since it reflected the saturation of major markets for the metal. According to Shearson, the close relationship between per capita consumption of aluminium and the level of economic activity was witnessed. In recent years consumption has shown an increasing degree of volatility as the level of economic activity has fluctuated. This appears to reflect the fact that the main markets for the metal are those which traditionally experience above average cyclical movements e.g. sales of automobiles and consumer durables tend to rise faster and also decline sooner than many other items which are consumers of the metal. In India, the demand of aluminium is being faced with artificial stagnation due to low production, imports, high input prices which pushed up the cost of metal. This stagnation is best reflected in the number of applications of aluminium which are not more than 300 as against that of 3000 in the developed countries.

Suggestions for growth

The characteristics of aluminium are exploited in the world over as energy bank particularly in the transport sector where energy saving is in the national interest. In view of our present and future energy resources, we cannot afford to neglect the production and use of aluminium for this sector. Looking at the impressive future growth rate of automobile industry, the increasing use of aluminium in the automobile industry can push up the stagnating consumption of this metal to a great extent. This can be achieved only when the metal becomes cost competitive by way of providing some concession in power tariff and some relief in the excise duty by the Government. Economies of scale not only lower the cost of production but also underwrite technological development. Aluminium semis technology has been changing very fast and calls for heavy investment and sophisticated human and equipment resources. The logic of economies compel the primary producers to play a leading role in developing semis production and technology. This will promote higher growth in the semi-fabrication industry. The very fact that the uses of aluminium are not more than 300 in number in India vis-a-vis over 3000 in the advanced countries, calls for aluminium being expensive to the consumer. The high cost of production is largely on account of high cost of inputs.

Future growth is dependent on cost reduction and product development efforts by the primary producers as well as Government assistance to help price reduction by reduced excise duty and some control on price of input material to make them available concessionally to the primary producers. □

The case of an unequal equal

Bhushan

This is the story of a sincere and hard-working clerk in government offices. He soon realises that he cannot survive in the vitiated atmosphere of offices, where those who don't work get away easily while donkey's load of work is thrust upon willing workers. This is but a usual phenomenon. Clerks form the backbone of the government. So, can the grand edifice of the government stand without its backbone?

"MR. RAMLAL, how many times I have told you not to put up your files in this fashion, do you remember ? But you. incorrigible fellow! You just don't want to take pains! Do you really deserve this nine hundred rupees job ? No conscience, e .... h !"

My boss loves this kind of chiding and he jumps at every opportunity that comes his way But who cares ? What is the use of having two cars, after all ! Isn't it that one of them is supposed to work as "IN" gate and the other as "EXIT".

The unequal equal

Why should I care for him ? What is the difference between him and I ? We are both graduates May be, I had scored better. I used to be so active in sports and debates and all the other activities of college. It is a matter of sheer luck that I could get the job of clerk only, whereas he became an officer ! He must have pulled some strings, surely, otherwise does he deserve to be an officer ?

What a mean fellow he is ! Has no other work except scolding and sermonising ? Why can't he himself write a note occasionally ? He has got a for this purpose only. I have to write it or type it myself. But he ? If only, instead of giving sermon could call his PA and speak out what he wanted the way he wanted, it would not have taken lor

Who cares ? He can't get me a promotion. can't get me an additional increment. He can't get me demoted or suspended. He just wants to me as a tool for his advancement. Why should I him ? What do I have to look forward to ? Not in office. But outside, yes, there is a big world, ing to be explored.

Optimum use of working ho

I start my explorations in the morning. I read "For sale" column of the paper carefully. Jot d the addresses and telephone numbers of prospe buyers and sellers of vehicles and start matching two lists.

I reach office in time, if I don't have to go where else. But I do my own work. I take out the of buyers and sellers and make full use of the c telephone. The boss keeps grumbling. So what? M a deals are struck on the telephone itself. For s I have to travel miles and miles. But I do all this velling and ringing business during office time

After struggling with the telephone for an hou so, I go with my friends for a cup of tea.

"What does she think of hereself ? Is she a be queen or what ?" says one of my friends.

"Who, who are you talking about ? I get intere in every SHE I hear of.

"O, that new girl who has joined the office rece She refuses to type. What will she do then ? Why she join as clerk if she can't type ? She should l

joined some hotel, where she could sit the whole day as a beautiful MODEL.

"May be she doesn't know typing. She will learn gradually", I speak in defence of HER.

"O No, she is not so innocent. She couldn't have got this job, without knowledge of typing. But she doesn't want to soil her dazzling clothes and finery by the dirty typewriter". My friend takes a malicious pleasure in condemning each and every female that he comes across. He is a sadist.

But not me. I adore them. I wish she could join my office. Then instead of having tea with these dull people, we could have sips of tea together. 'I could do a little typing for her, after all, I am free most of the time'. What do I lose by helping a colleague ? Then she will also adore me. And may be we slip out, occassionally, for a noon show film together! My wife will not know about it Even if she comes to know, who cares ?

I am transported to another world, and am enchanted by the vision of the FAIRY Her Monalisa smile invites me to dance with her I put my arms around her waist and am carried away by her fast, moving steps. !

"Two rupees Sir", the harsh voice of waiter brings me down to earth—my dream shattered poor me. . . !

The question of propriety!

I reach back to my seat, looking forward to the lunch time, which is not far off A few receipts have piled on my desk I glance through them quickly No problem, they are all simple receipts, some to be filed, some to be put up on file with a brief note But I can't accept so much of work so quickly

A big storm over a small tea cup is an inevitable part of a clerk's life I am no exception

"How have you marked this receipt to me ? I am not concerned with this'. I speak to my boss in an aggressive tone

"This is a simple receipt, just to be filed Mr. X' is on level today so you can file it". The boss explains coolly.

I can't accept my fate so easily, so I reply back, again in an aggressive tone—"But Sir, when I go on leave, even for a month, nobody touches my work. I get a big bundle of receipts on return from leave Why can't this letter also wait for the return of Mr 'X' ?"

"O.K , O.K. don't shout, if you can't do a simple thing like this, give it to me, I will do it myself" The boss bows down.

I throw the receipt on his table and get lost

It is not that I was like this when I joined office. I was a sincere and hard worker But soon I realised that sincere people cannot survive in this vitiated atmosphere Those who don't work get away without any work, while donkey's load of work is thrust upon those who are willing to work. This is sheer exploitation ! Why submit yourself to this kind of exploitation ? I shed away all the symbols of slavery and feel strong.

No slave of time!

I have an elaborate lunch session with my friends, unmindful of the fast running watch. I am not a time keeper, a slave of time. Time is my slave. So I use my time the way I want.

Afternoon session is half over by the time I return from lunch. The other half I have reserved for my "BUSINESS DEALS". In fact, this Business is the only thing that keeps me Busy and Alive. Otherwise, what can I do with this petty job ? Can't even buy simple ration for 4 family members, what to think of outings and parties and films and public school education for kids !

I take my scooter and slip away from office with a zoom. Office and officer ? Who cares ? Work at my desk ? Will take care of itself. Let it pile and pile. Let there be some furore about the work I am handling. It will be there, sooner or later, rest assured. Then I will project myself as a person dying of overwork, that's why some important matters slip by. I will be offered attractive overtime for the completion of work which has piled up due to my own inertia. I will 'work' in office one day, of course, during office hours only and get a pat on the back for being 'prompt'.

Yes, I was talking about slipping away from office. I slip away at three, but mark the right time on the Attendance Register. Nobody qustions I am a punctual person otherwise, you can see my record !

If, as a matter of ill-luck, there is some surprise check of attendance, in pursuance of some directive from the Top, I give my application for Casual Leave —that is all the Penalty that I pay. I have a never-ending stock of this leave, therefore, it readily comes to my rescue at every unforseen calamity !

Oh, this ego of mine!

"I am the biggest officer". I boast before my wife. "I prepare orders and sanctions for and on behalf of the President of India "

"O, really ?" My wife gets thrilled "Does the President know about it ?" she asks innocently.

"Yes, yes, why not He knows me very well 'He calls me very often and requests me to prepare some orders on his behalf. It is a minute's job for me. and I do it so perfectly, nobody can find any fault in it". I fabricate cock and bull stories before my innocent wife.

My ego gets inflated My wife carries out the small errands for me happily thinking perhaps, that I am the real President of India.

I may not be the President, but I am, definitely, the backbone of the Government of India Will this grand edifice stand if I collapse ? Can there be only life without the BACKBONE ? □

PNFC makes rapid strides

THE AMMONIUM CHLORIDE FERTILIZER and Soda Ash Plant of Punjab National Fertilizers & Chemicals Ltd commenced commercial production on 26th January, 1985. The plant has produced 13,300 tonnes of Fertilizer and 13,700 tonnes of Soda Ash with a turnover of Rs 6 15 crore upto 31st May, 1985 The Company expects to achieve a turnover of Rs 12 crore in the current financial year ending 30th September 1985 The turnover is expected to rise to Rs. 30 crore in 1985-86 and Rs. 34 crore in 1986-87. The Company's single Superphosphate Project will be in production towards the end of 1986. The turnover from this plant in the year 1986-87 is expected to be Rs 6 crore Thus the total turnover of the Company in the year 1986-87 would be around Rs 40 crore

The Company, promoted by the Punjab State Industrial Development Corporation Ltd (PSIDC), has the distinction of implementing a very prestigious and the biggest project of the State Government for the manufacture of 66,000 tonnes per annum each of Ammonium Chloride fertilizer and Soda Ash at a cost of Rs. 53 crores. The products of the Company—Ammonium Chloride fertilizer and Soda Ash marketed under brand names 'Suraj Khad' and Suraj Soda Ash—have a growing demand in the market. ☐

National child labour projects society

The Union Ministry of Labour proposes to set up a National Child Labour Projects Society To start with, projects are proposed to be taken up for 75,000 children working in the carpet industry in Mirzapur-Bhadohi area of Uttar Pradesh and about 40,000 children working in the match industry of Sivakashi in Tamil Nadu.

The objectives of the project are to reduce significantly the incidence of child labour and to improve the working conditions and terms of employment of children who must work in the transitory phase A comprehensive package of service, mainly by upgradation and improvement of existing schemes, are planned.

The employers would be required to contribute to project agency one square meal each day to every child labourer.

The Ministry has decided to take a number of projects in areas where there is a concentration of child labour after studying the reports in different parts of the country.

Regarding minimum age for employment of children it has now been decided that in view of the wide repercussions, the matter should be considered in detail and finalised in the Indian Labour Conference likely to be held by the end of 1985 ☐

Augmenting energy sector in Seventh Plan

The management of the energy sector is a key task for the Seventh Plan and beyond. The major need is to reduce the rate of growth of energy consumption in relation to GDP growth; to substitute coal and electricity for oil, through appropriate technologies and to manage supply and demand by suitable policies. Inter-fuel substitution possibilities have to be explored Systematic attention needs to be paid to conservation of energy by identifying specific measures and incorporating them in the overall corporate plan of the industrial units.

A big step-up in electricity generation is required in the Seventh Plan to meet satisfactorily the energy needs of the growing industrial and agricultural sector. For this, the State Electricity Boards will have to function in a businesslike manner. Organisational defects would be identified and remedial measures taken.

The power generation, transmission and distribution equipment manufacturing sector would formulate an appropriate plan of action for fulfilling the national power target ☐

Employment in construction sector

In India, the share of construction sector to the total employment is 3 to 4 percent as compared with the world's average of five per cent

An investment of Rs. 1 crore in the construction activity is estimated to generate direct employment of 184 man years of skilled, 381 man years of unskilled and 36 man years of work for supervisory and non-technical personnel In addition, indirect employment for experts in planning, research and managerial tasks is also created The construction sector can thus make sizeable contribution towards employment of un-skilled rural youth and skilled graduates coming out of the universities and technical schools

The level of efficiency at which the construction system operates will determine the rate of growth as well as the cost of services and goods produced. In view of the large scale expansion visualised in both public and private sector in the Seventh Five Year Plan, the need for achieving an efficient construction system with optimum productivity assumes great importance. The construction sector accounts for 5[?] per cent of the total capital investment in the country

Oil exploration and production in Sixth Plan

A total of 307 wells on land and 107 wells off-shore have been drilled and between January, 1980 and January, 1985 as many as 256 million tonnes of recoverable reserves of hydro-carbons have been added The total oil produced during the Sixth Plan is 102 77 million tonnes The target of oil production for 1985-86 is 30 12 million tonnes ☐

Khadi gets enhanced rebates

THE UNION FINANCE MINISTRY has announced enhancement of rebates and periods of rebate for cotton, silk and woollen khadi polyvastra and kambals/kamblies for 1985-86.

Cotton khadi products will now get 15 per cent sale rebate throughout the year plus 10 per cent special rebate for a period of 90 days as against a standing rebate of 10 per cent plus 10 per cent for 90 days during the previous year. The periods of special rebate are spread out in different States to correspond with the periods of important local festivals.

In the current year, silk and woollen khadi products as well as kambals/kamblies have been sanctioned 10 per cent special rebate for 90 days as against 5 per cent for 30 days, 5 per cent for 75 days and 10 per cent for 75 days respectively during 1984-85.

Polyvastra have been granted 20 per cent special rebate for 90 days during 1985-86 as compared to 20 per cent for 30 days during the previous year.

This decision is expected to boost total khadi sales from an estimated Rs. 166 crore in 1984 to about Rs. 208 crore in the current year.

The enhancement of sale rebates, besides giving an impetus to sales, will also subsequently stimulate production. Boost in sale of khadi will reflect in the income of over one million persons who are employed in the khadi sector. □

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States to go greener !

THE TREE PLANTATION programme has been going on very well throughout the country right since 1982-83. It has been achieving its targets with comfortable margin. During the 1982-83, 21,172 lakhs trees were planted as against the target of 19,614 lakh trees. The figures of achievements during 1983-84 and 1984-85 have been 24,231 lakhs as against the 22,240 lakhs and 26,741 lakhs against 25,097 lakhs respectively.

The performance of the States of Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura and Uttar Pradesh has been constantly praiseworthy. The tree plantation targets of these States were achieved with fairly good margin during this period. The States of Haryana, Karnataka, Nagaland and West Bengal have, however, been lagging behind the targets. □

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Vocationalisation of education

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Is I.R.D.P. lacking thrust ?

NEXT ISSUE

Planning—history and its lessons

Power-looms meet growing needs

THE NEW TEXTILE POLICY sets out as its main objective the increase in the production of cloth of acceptable quality at reasonable prices to meet clothing requirements of a growing population. In pursuit of this objective, the employment and export potential of the industry shall be kept in view.

The increase in production by powerlooms in the unorganised sector has been significant. A few years back the powerlooms contributed 37% of the cloth production in the country. This contribution has now increased to about 45%. The labour employment in the decentralised sector is roughly three times the employment in the organised mills sector.

One of the main advantages of powerlooms is that industrial activity need not be centralised but can lead to development away from metropolitan areas in various States. The State Governments must come forward to ensure that the growth of powerlooms is away from urban areas and it leads to balanced regional development. The Central Government has welcomed the views of the State Governments regarding the package of measures necessary to ensure a healthy development of the powerloom sector.

The removal of unnecessary controls which lead to undue harassment is one of the major objectives of the Central Government at present. The Government has tried to implement this major policy thrust and as a result powerlooms today are free of Central Excise involvement.

The production in the powerloom sector would be guided by the objective of raising productivity, manufacture of good quality of cloth, increasing efficiency, improving workers' welfare and facilitating locational dispersal. In keeping with this objective a suitable package of measures will have to be evolved by the State Governments in order to bring about a healthy development of powerlooms.

The State Powerloom Corporations and Boards have a major role to play in creating and operating yarn banks so that powerlooms, especially the looms owned by Cooperative Societies, are able to obtain their requirements of yarn at reasonable prices, without being at the mercy of yarn traders.

The important role played by the powerlooms has been recognised in the new Textile Policy. The ban on the creation of new capacity in the powerloom sector has been lifted.

The 3-member Powerlooms Board includes Ministers Incharge of Powerlooms of the State Governments of Gujarat, Haryana, Maharashtra, Andhra Pradesh, Tamil Nadu, Madhya Pradesh, Uttar Pradesh and Manipur. The Board advises the Government generally on matters concerning the healthy development of the Powerloom within power-operated weaving sector including measures to be taken to achieve better productivity, increased efficiency, improved welfare of workers and locational dispersal of powerlooms. □

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Vocationalisation of education—a policy perspective

Dr. (Mrs.) K. Sudha Rao

In an indepth study on the need and importance of vocational education in India, the author discusses its structural and operational details and its placement at plus two stage. She says vocational education covers only organised sector and miserably neglects the unorganised sector which absorbs 96 percent of the work force. While formulating the new education policy vocationalisation may be designed in a manner to suit the functions of both education and employment sector, she adds.

THE NEED AND importance of vocationalization scheme for India has already been established. Hence there is no need to go into the debate as to whether there should be or should not be vocationalization. Since 1884, various commissions and committees have recognised the importance of occupational education. The difference of opinions that were expressed by various committees and commissions were (a) in its structural and operational details (b) in the 'placement', of plus two stage: in college or schools or separate institutions for skill training. Kothari Commission rightly and timely solved the problem by highlighting the advantages of placing plus two in schools. The different committees' recommendations could be summarised into following three view points :

(i) school education should contain occupational education but the emphasis should be to orient the students for higher edu tion—school as a preparatory stage higher education.

(ii) school education should be geared to p pare students for occupational education that the majority of the students who c not afford higher education should be a to get some job for their living after sch education—school as a preparatory occupation.

(iii) school education should be poten enough to orient students for both :

(a) higher education.

(b) occupation.

(c) Need for diversification.

The Education Commission (1964—66) for first time took a comprehensive view of the edu tion scene of India and its diversities in differ States and UTs and then recommended for a "nati al pattern" which is the basic tool for introduc any kind of reform in the field of education in country. The main recommendations of the co mittee relevant to vocationalization are :

a. National pattern of education as 10+2 ·

b. Work experience in the ten year school;

c. Vocationalization at plus two stage witl possible coverage of 50 per cent of · enrolment therein.

The purpose of the plus two stage was two fol

(i) to combat the madrush to the universiti and

(ii) to make available to students alternative avenues after completion of 10-year schooling whereby a student could :

(a) enter the work force;

(b) choose higher level academic courses;

(c) choose vocational course and prepare for employment.

Present status

Out of 22 States and 9 Union Territories in India, 10+2 system of education has been introduced in 17 States and all the Union Territories. Haryana has introduced plus two system of education in both schools and colleges from this academic session (1985-86). Himachal Pradesh is going to implement in the year 1986-87. Haryana has already taken necessary steps towards implementation, planning and staff development. About 250 college and school principals were trained for this specific purpose. Himachal has started necessary discussions for this purpose.

So far vocationalization has been introduced in only government schools and very few public schools. If we glance at the total number of higher secondary schools in India and the number of schools that have introduced vocationalization, one gets the feel of large gap between the present situation and the goal of VE.

Further year-wise analysis of the data indicates that number of schools offering vocational education is increasing year by year in a tortoise speed except in Tamil Nadu. Andhra Pradesh started VE in 22 junior colleges in 1979 and by 1983-84 the programme has been extended to 107 institutions. Karnataka has risen from 13 institution in 1977 to 109 institution today. Maharashtra started with 33 and has crossed 50 now and same is the case with most of the States and UTs. Similarly, the number of courses being introduced has also increased.

Further when we look into the administrative pattern and implementation strategies it is obvious that in some State plus two is in schools (Tamil Nadu) whereas in others it is in college (Andhra Pradesh). Secondly, in some States the vocationalisation is controlled by the education department (Tamil Nadu), in some others it is controlled by department of industry (Haryana) or technical education (Maharashtra). There are States which have established separate Board for administration of VE (Karnataka). Some States have appointed special administrative and academic staff for running the courses while in others part time appointments and assigning of duties in addition to other duties have been done. Like this there are as many variations as there could be in implementation of vocationalization in India. Such a diverse state of affair is obvious in a country like India where so much of regional, socio-economic resource variations are there. Under such circumstances it is not possible to have an idealized model. The model that needs to be developed by the state depends upon factors such as the level of areas of development, the nature of economic, political and social system, its organisational and management 'style', its existing educational and training institutions, tradition, the outlook and administrative capacities of its leaders in the public and private sectors. Any model that is developed on the basis of local consideration is bound to have its wider acceptability and viability.

Recent thinking

The recent working group of the Planning Commission on Secondary Education states in its report that "vocationalization of higher secondary education is a national imperative for an effective correction in the supply system of manpower to keep pace with the planned developmental activities". It has been proposed to introduce vocational courses in 7,000 of the existing higher secondary schools by the end of the Seventh Five Year Plan. Of these 400 schools per year, one in each district, are proposed to have vocational courses under 100 per cent Central financial assistance and they will act as demonstration centres. Some of the other recommendations made in the working group report are :

— to keep in mind regional needs and local employment opportunities while designing the courses;

— to introduce more courses which have relevance to rural needs;

— courses should not be terminal but vocationalization should be of adequate level;

— suitable instructional materials to be developed;

— the recruitment policies to be modified keeping in view the vocational streams students; and

— AIBVE and BVE to be set up for coordination and implementation of VE.

An approach paper of the Planning Commission for the Seventh Plan focuses on :

— Maximum utilization of existing resource for the development and economy;

— strengthening of District Manpower Planning councils;

— Employment Generation Councils;

— Generation of gainful and productive employment;

— Coordinated and composite approach to employment policies;

— Avoid imbalance between supply and demands for trained and educated manpower;

— Development of intermediate level of skills; and

— Training for emerging type of new skills and so on.

Problems faced by vocationalisation

Problems associated with implementation of vocationalization like planning, administration, monitoring and evaluation, feedback, etc. put major constraint on its very success. To put it in specific terms :

— Vocationalization is a scheme containing two major programmes of the society : vocation and education. Former being the responsibility of employing sector and later being the responsibility of education sector, the very conception of the idea of implementing the programme under the responsibility of education sector alone has posed a major problem to its successful implementation.

— The programme has been designed for the members of the community without developing proper mechanism to involve community in its planning, management, implementation and feedback processes. This has further created a feeling that something is being imposed on them.

— The programme that has been planned by the education sector alone with regard to curriculum planning, teaching and skill training, field experience, etc. has certain in-built disadvantages. It requires expertise of employment sector and other sectors which have resources to cater to the needs.

— Vocationalization is costly education (any education having practical training is costlier than pure theoretical education for ex-science education) and hence cooperation and coordination with employing sector and developmental departments essential. But unfortunately it is very weak at present.

— At present vocationalization courses are being planned only for the organised sector in which the absorption capacity is only 3 to 4 per cent whereas the unorganised sector absorbs 96 per cent of the workforce and for this hardly we have courses introduced under this programme.

— Although it is clear that the introduction of vocationalization in the education sector can in no way increase the number of jobs still the courses that are being introduced are geared invariably to cater to the needs of wage employment, neglecting the possible self-employment avenues.

— Admission to vocational courses are done on the basis of the marks obtained by the students in 10th standard rather than the interest and aptitude shown by the students in lower classes. This one act has ruined the genuinity and sincerity of the programme, and in turn has brought several psychological input into the scheme. One such act has led to mushroom growth of unexpressed but convinced feeling amongst students and parents such as :

(a) Vocationalization is for poor learners.

(b) Vocationalization is for those who cannot afford higher education.

(c) Vocational students are not fit for getting higher education (cognitive assessment).

(d) Vocationalization is for those who cannot learn such subjects as natural science, social science, etc.

(e) Vocationalization is meant for earning the bread soon after the completion of the course.

(f) Vocationalization is for those who could not get admission anywhere.

These were in fact never the intentions of the programme:

— The existing system does not provide any opportunity for further higher education in the concerned field, thereby indicating to the students that vocationalization is irreversible dead end. Once entered neither one can come back nor go ahead. But on the papers different States have made different types of provisions by adopting eligibility concept, bifocal concept and terminal concept. In practice, all these amounts to same, i.e., terminality. (except Maharashtra) Constitutional provision of equality of opportunity has its own expectation from the programme.

— The programme has been implemented only in plus two stage and that too in only formal system of education. Neither it gets foundation earlier through work experience (because it is not implemented with all seriousness), nor it can be enriched later. Secondly, horizontal movement from formal to non-formal system is not possible because no vocational courses are introduced in the non-formal system, something like getting entangled in a cobweb. ♦

- It is almost a decade since its implementation but still no necessary changes have been introduced in the employment sectors recruitment policy, apprenticeship scheme, etc.
- Present examination system itself is already posing too many challenges to education system. In spite of this experience no precautionary measures have been taken for the examination of vocationalization courses.
- Already existing skill training institutions like polytechnics, ITIs, multipurpose schools have a particular set of curriculum, syllabus, training facility, examination pattern, apprenticeship scheme and employment avenues. Introduction of vocationlization, in addition to the existing institutions requires careful analysis of these
- Curriculum, syllabus, text books production and distribution are some of the other problems that the vocationalization programme is facing.
- In good number of States programme has been introduced before adequate staff has been trained for the purpose. Invariably the professionally qualified personnel draw more salary to that of the salary drawn by teachers in the education sectors. This difference is posing a challenge for non-availability of professionally qualified staff
- Employment sector is faced with new challenges due to the implementation of vocationalization programme. Earlier the applicants belonged to only two categories viz :
  - (a) individuals having general academic degrees;
  - (b) Individuals having skill training diploma certificates from technical training institutions.

  Now the third and new category which is a combination o both, viz. skill trained products produced by the education system, i.e. output of vocationalization scheme.

Employment sector uptil now is used to appointing one of the two. Now it has to choose amongst many types. Preparation for accepting the challenge needs immediate attention.

Policy implicatio n

Vocationalization programme has been envisaged to achieve a meaningful equation between education and occupation. While formulating a new education policy we should take into account constraint and restraints faced by it, expectations of students and parents, society and nation and changing times and plan and design the programme in such a way to suit the functions of both education and employment sector.

Vocationalization has to be restructured to reduce the cost without reducing the quality and input to the programme. This could be achieved by taking certain policy measures enlisted as under:

Collaboration and coordination with:

- other developmental departments like health, social welfare, rural development, agriculture, animal husbandry, small scale industries etc., These departments also have programme of employment, training, etc with huge financial allocation for running their programmes. Collaboration with these departments will not only contribute to increase in the inputs to the programme but also in absorbing the output of the system, for example Departments of Rural Development alone, under its NREP programme had made Rs. 53,597 lakhs in 1983-84, out of which only 39,222 lakhs was utilized under TRYSEM. The allocation is somewhat Rs 40 068 lakhs Under it 9,15,697 rural youths wre trained and 4,29,613 youths got self-employed Similarly other departments like social welfare and health departments also have training programme which could be organized under VE programme by the education department for example; training for Anganwadi, workers in ICDS programme, training for LHVS and supervisors. Such collaboration, besides reducing the cost, saves time, energy, resources and also increases efficiency and accelerates the goal achievement process.
- existing skill training institutes like polytechnics, ITIs, multipurpose schools, etc. Collaboration with these institutions help in : reducing the duplication of courses, getting experts for teaching skills, in sharing equipments and other facilities In addition it also helps in better planning and management of the courses.
- with production units : both private and public.
- with credit banks, life insurance corporation, financing agencies, etc for getting loan facilities for self-employment.
- with District Manpower Planning Councils, employment agencies to fill the gaps such as to train people for which they are not finding people, and bring certain changes in recruitment policy.

— with the community to get community involvement, support besides getting human and material resources for the programme. This also helps in fetching, accepting and publishing the programme. Community participation is basic to success of any programme Such a step would be necessary to increase community participation which in turn brings in changes in their attitude towards positive direction.

Collaboration and coordination should be initiated and strengthened at the Centre, State, District, Block taluk and institutional levels. Such collaborative effort should be made from the initial stages of the programme itself For example, while conducting the survey itself instead of education department conducting a separate survey for the implementation of vocationalization, to a large extent, one should first have a look at the surveys conducted by various other departments like lead banks, employment agencies, area skill surveys, manpower council surveys, educational surveys, etc. Then the effort in terms of time and money that the education department has to put could be reduced and focussed to collect only that much information, which is missing in these surveys and that is relevant for the purpose of implementation of VE.

— Community participation in basic to the success of any programme

— The courses in vocationalization should cater more to the unorganised sector and self employment possibilities

— Criterion for admission to vocational courses be carefully analysed and suitable policy decisions taken

— Policy decision be taken with regard to introducing suitable vocational courses in graduate and post graduate classes to provide proper vertical mobility to the VE students.

— Proper courses be introduced at the classes 5 to 10 to develop proper attitude, bring in awareness and have linkages with lower level classes

— Suitable vocational courses be developed in the non-formal systems of education in the form of functional education to promote horizontal movement

— Recruitment policy and apprenticeship scheme be suitably modified to accommodate the outputs of VE stream.

— Examination reforms should be prime concern if at all vocationalization needs implemented in an efficient manner because subjectivity in examination is more wherever practicals are to be examined and vocationalization means more of practicals. This is a measure to ensure quality.

— Policy measures be evolved for recruitment of professionals and part-time teachers for skill training

— Staff development procedures, promotional avenues for staff, text book production, distribution, etc be looked into wherever the plus two is introduced in both colleges and schools (example Haryana) and vocationalization being introduced in separate set of school (example Haryana) requires careful analysis of the situation and proper policy controls

— Decentralization of powers and delegation of authority are the other two key issues in the successful implementation of VE.

— Counselling and guidance service should be provided for the school children in which students should be made aware of existing opportunities, available avenues and future perspectives.

From the above discussion it might appear as if the strategies and policy issues are mixed up. But it is obvious that these strategies could be and should be extended to evolve policy issues, if at all we are interested in the success of vocationalization of education at plus two stage □

Better fertilizer use increases productivity

The use of chemical fertilisers is extremely impor-estimated to be 9 2 million tonnes and it would be around 14 million tonnes by the end of the Seventh Five Year Plan

The use of chemical fertilisers is extremely important in view of the new agricultural strategy which India has evolved over a period of time now under implementation. This is for the simple reason that the high yielding seeds|hybrids evolved by our scientists are capable of expressing their full production potential under optimum use of chemical fertilisers both under irrigated and dry land areas However, the use of chemical fertilisers in our remote villages has been confronted with several problems especially creating salinity hazards. low efficiency rendering its wasteful consumption and thereby increasing cost of production, ever increasing price necessitating provision of subsidy, non-availability of credit to purchase at the right time and the like Thus, its judicious use to improve net return on the investment is a sine qua non.

New education policy–a view point

Shamsuddin

The author describes the 1968 education policy as miserable failure in our efforts for national development. He calls upon the intellectuals and the educationists in the country to put their heads together and think collectively to encounter successfully the challenges of education and help evolve the new education policy to achieve the desired goals of character formation and integration of the whole personality of school children.

IT IS AN admitted fact that education is not merely the main instrument, but rather the most powerful means by which social, political and economic changes can be brought about in national life. It is for this reason that during the last two decades after Independence, serious thought has been given to the changes and reforms in the system of education in India. Realizing the need for the reorientation of the aims and objectives of education at secondary level, the Secondary Education Commission had recommended the re-organisation of the pattern to prepare citizens for a Secular Democratic Republic, to increase their vocational efficiency and to develop their alround personality. The Kothari Commission took still broader view and thought of education in terms of national development It had envisaged a plan of education which, besides increasing the productive efficiency of pupils, would help to achieve social and national integration

Missing excellence!

But, inspite of all these high sounding reforms, what is the bitter reality, is not hidden from us. We can't close our eyes and ears from the state of affairs existing in our educational institutions and the day to day vehement criticism levelled against our system of education. The educated unemployment in youth, growing indiscipline among students, negative attitude among teachers, indifference among parents and lack of faith in education among the people in general are some of the problems vexing the heads of the intellectuals in the country. We may talk of our achievement in terms of expansion of education but we have missed excellence in it and hence all this hue and cry, chaos and confusion and ultimately no peace and happiness in life

Probably all these things must have been in the mind of our young Prime Minister, Mr Rajiv Gandhi when on January 5, 1985 in his broadcast to the nation he promised to chalk out a new policy on education in order to help the country both scientifically and economically to enter the 21st century. His announcement on July 7, 1985 that such a policy would be ready soon, had given a surprise to the public More surprising was when the document towards new education policy was placed before Parliament on August 20, 1985 under the caption "Challenge of Education—A Policy Perspective", which is to provoke a discussion on certain issues relevant to the formulation of a new education policy.

Challenge of education

The objectives of 1968 education policy were that education should be related to life; more educational opportunities should be provided to all; there should be qualitative improvement in education; science education and technology should be paid more heed to, and more emphasis was laid on cultivation of moral and social values. All these objectives were worth achieving but, unfortunately, those could not be achieved. In this connection the do-

cument has been honest in confessing that these objectives have remained unachieved !

It has frankly and openly criticised the policies which were followed, the decisions which were taken and the important issues which were deliberately avoided ! It has also pointed out how the education budget used to be inadequate. It has not hesitated to criticise the miserable condition of elementary education in the country; unsatisfactory progress of female education and the 77 per cent school drop-outs.

While listing the drawbacks of our earlier policies, sinking condition of colleges and professional institutions, miserable condition of our universities and higher education, failure of the states to meet the necessary budget, limited resources, innumerable hurdles in the way of implementation and apathy of the people have been boldly pointed out. The existing system of examinations, which makes a mockery of examinations, has not been spared ! That too has been criticised.

Mr. K. C. Pant, then Union Education Minister, in his foreword to the 117 page document has mentioned, "The analysis of developments over the last two decades makes it clear that desired improvements have not materialised because neither the resources nor the measures for restructuring were commensurate with the imaginative and purposeful thrust of the educational policy adopted in 1968"

Needed reforms

One of the remarks of the document runs as, "In the new design, capacity to learn will be more important than what is learnt and continuing education will be emphasised". Greater emphasis will also be laid on social and moral values In order to bring the much needed changes, it has demanded a handsome budget. Accordingly, the budget needs for school education in 1990 would be four times the allocations of 1980-81. The country in that year would be needing an additional 22 lakh teachers over the number of 21.7 lakh teachers in 1981 Universalisation of elementary education and spread of adult education by 1990 have also been emphasised.

Thus, in brief, the document, presented to Parliament, for formulation of the new Education Policy, forcefully advocates "emphasis on vocationalisation of the education system, reorientation of the learning process, a national core curriculum for schools and thorough going examination reforms" and, "speaks of the widespread feeling that the education system must be radically transformed. Marginal changes here and there just will not do". It has also cautioned, "vocationalisation should not be linked only with employment in industry; it should also be aligned with agriculture, the service sector and various programmes of rural development. It should prepare young people for self employment".

But it has failed to specify how jobs should be delinked from degrees and what criteria should be applied in place of degrees. Similarly, it has suggested that "higher education should be restricted to those with a scholastic bent of mind"; but then it also hints that "subsidies for higher learning should be cut; nowhere working out the highly iniquitous implications of the latter proposal".

Basic issues left untouched !

In short, the new document more or less seems to be like the old one. Its basic aim is to "provoke a discussion" in public on certain facts, views and issues relevant to the formulation of a new policy on education". But the questions arise whether the heavy budget needs would be available ? Whether it would improve the quality of education without which the task of national reconstruction can never be completed ? Whether it would develop employment oriented vocational skills without the needed resources ? Will it be able to achieve universal elementary education and adult education targets by 1990 when the population of the country is increasing day by day ? Will it be able to prescribe a national core curriculum for schools in a country with so many diversities, faiths, races and groups ? Will it be able to reform the examination system thoroughly ? Will it develop in people such habits, attitudes and qualities of character as will enable them to bear worthily the responsibilities of democratic citizenship ?

In order to answer the above questions education will have to be viewed from a new angle. Then it will be the concern of not merely teachers, students, parents, administrators and planners but the society as a whole will have to evince keen interest in it Then education will not be merely achievement of knowledge but self realization, character formation and integration of the whole personality of school children ! Now the question again arises whether is it feasible and practicable to achieve all the points mentioned above under the situations prevailing in our country today ?

These are some of the problems on which people may have controversial views. Hence it is the duty of the intellectuals and the educationists in the country today to put their heads together and think collectively on the above mentioned important issues to find out the solution. So that the "Challange of Education—A Policy Perspective" may be encountered with success and the new education policy be implemented successfully to achieve the desired goals. □

Managing educational finance

Dr. C. B. Padmanabhan

Calling for a new dimension in the proposed education policy the author stresses the need for financial management of education which should be concerned with mobilisation, utilisation and evaluation of the use of available resources. He suggests a bigger research and study of the educational finance as an important field of academic inquiry for a greater policy making support.

THERE IS NOW considerable amount of discussion on a New Educational Policy for India. Nowhere is the need for a new dimension in policy more urgent than in the area of financing of Indian education. To say this is not to deny the large number of difficulties involved in spelling out or implementing any policy regarding financing of Indian education. Indeed there are conceptual difficulties as well as difficulties in operationalising any dimension of financial policy for Indian education.

A major problem regarding educational finance is the inter-dependence of the economy and public finance especially at present when the importance of Government—State and Centre, as sources of finance is on the increase and the pressure on government budgets is mounting. Problems are further compounded by the vast number of changes that have come about in the very concept of education itself—whether it should be limited to the time spent by a student in the age group 6 to 23 or it will have to extend far beyond and become life long. The changes in the technology in the economy are bound to make it necessary to widen the very concept of education. All this calls for a clearcut enunciation of the financial policy for education in India more rather than less urgent. Educational finance touches all aspects of educational management and it is worthwhile to note its pervasive nature. It affects the supply of education, the demand for education as well as equality of opportunity.

Objectives of financial policy for education

Financing policy should be concerned not only with the magnitude of finance to be allocated to education—as a percentage of GNP of 6 per cent for education by 1985-86 as laid down by the Kothari Commission, but also with the processes and procedures of allocation, utilisation and evaluation. In fact, resource management in education includes financial management and should be concerned with mobilisation, utilisation as well as evaluation of the use of the available resources. In this connection both education and the finance should include formal non-formal and informal; and finance should include sources and management of educational finance as well as the process of spending and using funds. When education finance is defined in the above fashion in a comprehensive way, any policy statement regarding educational finance should take into account the need for mobilisation of edequate resources for education, (the spelling out of adequate resources for education though not easy has to be attempted) its allocation and its effective utilisation and monitoring and evaluation. State and Central Governments have their grants-in-aid code or other legislations which will have to reflect fully and faithfully the contents of the financial policy of education.

The foregoing delineation of the possible contents of any financial policy for education will help us indicate all that has to go in such a national educational financial policy for Indian education. We shall indicate them in the following paragraphs :

First of all, noticing that there are large differences in the administration and financing

of education for each level in different States of India, the role of the private sector and mobilisation of adequate resources for education will have to be clarified. There has to be an unequivocal statement emphasising the urgency of mobilisation of additional resources for education from other departments of the government as well as from non-governmental sources like local bodies It is also worthwhile laying down to the extent possible by every region a specific target for mobilisation. This effort for mobilisation will have to be accompanied by the laying down of a certain level of expenditure per student as a minimum, at least, for primary and middle level of education.

Mobilising resources for quality education

Due to various historical and other reasons, private sector in Indian education has to continue but surely their activities can be earmarked for certain non-compulsory sectors of education. In this context, it is worthwhile considering the distinction between the compulsory level of education of 8 years' duration as laid down in the Indian Constitution and the non-compulsory sector of education beyond that. The primary responsibility of the Government will be to ensure the development on sound lines of the compulsory sector of Indian education. In this, Central, State and local bodies will have to play a major role with efforts for local mobilisation of additional resources as a safeguard of good quality education The post compulsory sector of Indian education financing will be laid down to be concern of the non-governmental sector like voluntary bodies—other kinds of private enterprise. The grants-in-aid policy of the Central and State Government will accordingly be more concerned with the compulsory level of education and only marginally concerned with the post-compulsory level of education. There are several formula of grants-in-aid which will be utilised for the purpose of extending financial assistance in a discriminating function which can be changed from time to time for the post-compulsory level of education.

Central Government in financing education

Since States are in charge of elementary education, the Central Government will have to play the role of a helper for the State Governments by extending financial assistance again based on the principles of equality of opportunity for socio-economic groups as well as the different regions within a State like rural and urban. The Central Government's role in helping the State Governments should be based on fiscal equalisation, accordingly both the mechanism adopted by the Finance Commission and the Planning Commission will have to be changed Of course, the policy statement cannot lay down what the Finance Commission has to do but the principle of fiscal equalisation can be incorporated as a major component of Indian edu cational financial policy. Fiscal capacity equalisatio and fiscal performance equalisation are the twin com ponents of fiscal equalisation. This device will hel to ensure that that every State or within a State a re gion raises resources according to its capacity an incurs a minimum amount of expenditure per studer on compulsory education.

Utilisation and monitoring

The States differ in regard to the efficiency in th use of available resources for education. There ha to be a policy statement which will serve as a guid to all State Governments in regard to efficient util sation of available resources in the form of teacher laboratory, equipment, etc. Such guidelines will en phasize the need for collection and timely public tion of financial and cost data for use by statist cal department of the State Government. It will als enable the preparation of the budget in a soun fashion.

Monitoring of the efficiency in the use of resourc is an important requirement for a sound education policy. In fact, in the management of the education system in every State, decisions have to be made fr quently on a number of questions not covered l traditional educational policy or by available inform tion and analysis In order to overcome this difficul there has to be a strengthening of a research strate which will establish research priorities in the develo ment and utilisation of the resources for research bo at the State as well as at the Central level. It is the area of educational finance that R & D will ha to provide a big helping hand by taking up for r search such questions as grants-in-aid policies ar how well they are functioning and what their impac are Thus, the educational policy statement itself w lay down the urgent need for R and D in order strengthen and enrich educational financial poli statement and its revision from time to time. Su R and D effort will be directed to help the sound ir plementation of educational policy by the Centre well as by the State by providing the necessary in formation on items like unit cost at the District lev and the possibilities of mobilising more resources, et It will also provide guidelines to the Centre in t matter of compensating the States, Universities individual institution for inflation and the conseque rise in prices in matters of grants-in-aid. In additio research efforts will be directed to find out the effe of different kinds of inputs like teachers and oth facilities on the quality of education. In this conte the use of unit cost like cost per pupil, cost per pu on non teacher items, cost per pupil on teacher sala will have to be looked into and States may be e couraged to use them. A major objective of finan ing policy for Indian education will be to ensure th all States incur a minimum level of expenditure

(continued on page 24)

Is IRDP lacking thrust ?

Prof. Rajendra N. Tewari

Reviewing the poverty amelioration programmes like IRDP, the author observes that failure to contain rural poverty is the failure to understand the elements that perpetrate it. He feels political will power is so weak that effective reforms have no priority or urgency as these may evoke adverse reaction from powerful classes or interests. Liberation of the rural poor from structural and organisational constraints is a neglected element in the strategy. In view of this, the author says, the professed priority for reduction of poverty during the Seventh Plan may be a pure neo-classical rhetoric.

POVERTY REDUCTION is to form the major strategy of the Seventh Plan also. There is no denying the fact that today the 'poverty profile' in the country is better understood. Whether the same can be said about the appropriateness of the theoretical framework influencing the policy is debatable Hence the strategy is doubtful unless a radical departure from the past is speculated. For that reason it would help, therefore, to understand the theoretical moorings of those who influence policy options. More specifically the following are examined : (i) framework within which the policies were, and are most likely to be, drawn and implemented; appropriateness of the theoretical frame to combat our most glaring problem, i.e., rural poverty and widening chasm between the rich and the poor; (ii) to examine emprically the effectiveness of the delivery system (DS) of the poverty amelioration programmes, particularly the functional viability of the delivery system for Integrated Rural Development Programme (IRDP).

Statistical evidence shows that despite controversy over the methods of estimation, overall conclusions remain valid, that is : (a) poverty of the vast millions in the country is the major reality of life; (b) the hard core of poverty is to be found in rural areas; (c) three decades of planned economic development have not helped reduce the number and proportion of those who live below the poverty line; rather it continues to grow apace. Party in power in state is 'leftist" or 'rightist' is, apparently, least significant. Even a morbid critique of economic planning in India or, for that purpose, of the ruling party, cannot blame lack of resolutions, on paper, to remove rural poverty. Motive behind this outlay-biased priority is a moot point for this paper. It would, therefore, be useful to examine the foregoing aspects of poverty amelioration programme in India to grasp the limitations of the underlying approach albeit the political economy of rural development in India.

Data material is from a major study on the subject undertaken by the author under the State Bank of India Chair at the Public System Management Centre, Xavier Institute of Management and Labour Studies, Jamshedpur The States of Tamil Nadu and Bihar were selected to broadly represent two contrastive environments, a fairly successful and a laggard state. Field work was spread over a period of two years 1980-81|1981-82. The author acknowledges with gratitude the active support and patience of the 'actors' viz. development administrators, bank employees, field workers, peasantry, rural artisans, non-governmental agencies, etc. Study material was collected through personal interviews (structured and unstructured formats both were used), attendance in meetings, camps records and documents. All this work demanded time and resource; SBI's support and 'actors' cooperation took care of these requirements.

Strategy, theoretical perspective

Strategy and apparatus for accelerating rural development in the Sixth Plan is, basically and essentially, to deliver a package of technology and services; asset transfer only to the extent that entail provision of credit to buy equipments worth few thousand rupees per household. Basic plank of this strategy being the abounding faith in neo-classical

economic thought that postulate development as transformation from traditional to modern society on notions abstracted from the so-called developed West, e.g., modernising agriculture to raise productivity to generate surplus for the market. Assumption implicit in the theory is that in this process everyone in the rural sector will stand to benefit. Strategy built upon the preference of 'best' of the technology, and beneficiary, obviously lead to inequalities between countries and within the country because it failed to account for distortions caused by the unequal social and economic conditions prevailing almost everywhere. Obviously, fruits of development have been mostly availed by the better endowed nations when we make inter-nation comparison, better endowed regions when we make intra-country comparsion; and by better endowed members of the society when we consider inter-sectoral and intra-societal sharing of gains. It is not to deny that neo-classical or structuralist schools were unaware of the necessity to eliminate or contain inequalities but neither accounted for those theoretically. Policy and strategies abstracted from such a theory thus failed to develop instrumentalities to contain; (a) influence and distortions due to international capital; (b) interest of the state reflected through the class structure for weilding effective power, e.g., urban-elite-based bureaucracy relying more and more on governmental controls which they could manipulate to their choice; and (c) the power structure at local and at the higher levels, e.g., leadership thrown-up through a political process in which rural poor, though substantial constituent, could not be 'dominant' force to influence decisions.

Thus, without a redistribution of productive assets and in the presence of class-contract dominated institutional—organisational structure, competitive conditions could not be created. Equality of opportunity to gain from, and capacity to receive and utilise the flow of assistance, are obviously missing. A delivery system established within such a premise could not be expected to alter the basics. Under the circumstances, inequalities and poverty among the rural poor had to rise than decline. It cannot be denied that the theoretical ethos accompanying international capital in the rural sector did not affect the strategy. On the contrary, evidence in sufficient measure is available to support the contention that it did influence. Plan strategy. Let us have a look at it.

In 1975, the World Bank released its Sector Policy Paper on Rural Development and here is a quote, revealing the thrust of its operational strategy for what they called as 'hew style' projects. "The central concept of rural development presented here is of a process through which rural poverty is alleviated by sustained increases in the productivity and incomes of low income rural workers and households (Self : rural poor have neither land nor the resources, then where from productivity would emerge?). The emphasis is on raising output and incomes rather simply redistributing current income and existing assets, although the latter may be desirable or even essential in an overall rural development strategy which links production with distributive or equity objectives". Assessment of Bank's thesis would confirm that (a) capitalist mode of production and consequent social relations are to be maintained; (b) the operational strategy is essentially to manage the flow of development assistance, a technocratic approach, being fully aware that it will be to the exclusion of the rural poor; under the prevailing institutional and organisational arrangements the flow will be impounded by the more powerful groups to their own advantage.

To be fair, the Bank did recognise the necessity (quote) "....first for a clear understanding of the system which perpetuates poverty". What surprises is the fact that it conveniently glossed over the basic 'perpetuating' cause. Dominant economic thought drawing sustenance from the contemporary developed economies and the inherent thrust accompanying the international capital, thus, suited the government and planners alike as the strategy advocated was not to 'alter' the power balance; a sort of mutually reinforcing arrangement forged between the class-caste based political leadership and the urban-educated elite class dominating administrative apparatus (organisational forums and forms), the delivery system (DS). In other words, the strategy for 'new style' projects supported by the World Bank did not call for measures that would tilt the balance of power hence no serious adverse reaction from established groups would emerge. There is nothing wicked or conspiratorial about this but a consequence of the political economy opted for—an alliance that has followed an evolutionary pattern.

The World Bank thesis identified a mix of activities, which can be sequential or simultaneous, like health, education and agricultural development as most critical mix in programmes to alleviate rural poverty. For agricultural development, as outlined above, technology-based approach would benefit primarily and directly those who had agricultural endowments (a class in itself). Education, as was inherited and subsequently developed, focussed on a 'certification system' serving as a passport to glamourised career thus attracting manpower, selectively, from rural areas to urban areas. Even graduates in Agriculture Sciences have used it as a syphon to reach for professions symbolising urban elitism; a historical pattern characterising the colonial era not strengthened by contemporary policies. Obviously, failure to contain rural poverty, or for that matter poverty in general, is the failure to understand the elements that perpetrates it; it also reflects lack of collective (and not personalised) will power to combat poverty and inequality effectively. First genera-

tion of Freedom Fighters in India were well aware of the perpetrating forces; radical institutional and structural reforms did find a prominent place in the strategy till the Second Five Year Plan. Thereafter, one could only find a faint echo of those resolutions; political will power if at all there is one, is so weak that effective reforms likely to engender adverse reaction from powerful classes have now no priority or urgency. Liberation of rural poor from structural and organisational constraints is, therefore, a neglected element in the strategy that has been followed and those which are likely to be followed. Complete break from the theoretical economic thinking is too much to be expected from those who make the policy in India. Educational linkages of the planners, power structure that has thrown the present leadership and the policy make into prominance, barring exceptions being few and far between and the dominant economic thought accompanying the international capital are all indicative of the trend. Planning Commission's professed priority for reduction of poverty in general and of the rural poor in particular, during the Seventh Plan may thus be a pure neo-classical rhetoric Economic paradigms preferred by policy makers is inappropriate as well as inadequate to resolve the basic malady.

Commercial banks, a major promoter and investor in anti-poverty projects, IRDP type, more likely than not, being made scapegoats for consequential failures. A perusal of official conclusions and recent debate in Parliament also lend support to the apprehension that radical reforms are not the priority; be those 'in-power' or those who aspire 'to be in-power'.

The programme

With a view to removing regional disparities, to creating income opportunities during the slack employment periods of the year, and|or to raising income level of specially identified groups, a number of programmes were launched in 70's preceding IRDP variously labelled as · Drought Prone Areas Programme (DPAP); Food for work; Small Farmers and Marginal Farmers Development Agencies (SFDA and MFAL respectively) and, the Command Area Development Agencies (CAD) etc. IRDP, a late comer in this galaxy of programmes was first proposed in the Central Budget of 1976 77; modified programme was introduced in 1978-79 beginning with 2300 blocks of which 2000 blocks in the country were under continuous coverage with the DPAP. CAD and SFDA. Constellation of programmes inventoried above were, and are, meant to realise the principal objective of the Sixth Plan, i e, removal of unemployment and underemployment in the rural sector, and to achieve an appreciable rise in the standard of living of the poorest sections—poverty amelioration.

This generation of anti-poverty programmes, operated through similarly named agencies are 'target group' oriented programmes but for some variations in IRDP which operate, by and large, through SFDA-DPAP as its DS. More significant features of IRDP, highlighting variations as well, are the following. Firstly, the 'target group' be assigned to break through the 'poverty line'. Secondly, non-agricultural activities including 'industrial' and 'tertiary' sectors were included to provide substantial assistance (a debatable point since the scale of finance provided for do not lend support to it) so that the target group is enabled to cross "once for all the poverty line". Thirdly beneficiaries are to be fully 'involved' in the selection of schemes for them (quate) "IRDP" not to be seen as government programme without 'popular' involvement. The official machinery is to 'articulate' the aspirations of the rural poor and to translate their economic ambitions into viable and meaningful schemes". Within few years of the launching of the IRDP, and much before realising the basic objectives, this programme was extended to all the blocks in the country. In itself this step was negation of the caution sounded in these words : "The rush to achive the targets in the short-run, without due regard to the basic objectives of the programme should be resisted". It is not necessary here to dwell upon considerations favouring hasty expansion What is proposed here is to examine the IRDP's capability through date partaining to areas—blocks covered in the initial years. It is the experience and satisfaction obtained during this period that was being transferred over to a wider expense. Therefore, an evaluation of the delivery system and the experience thus far gained is of prime importance for projecting what IRDP can hope to achieve

IRDP, as an important instrument in the armoury of strategies for the Sixth Plan and to be thereafter implied operationally the following · (a) Identified beneficiary should be below the poverty line; (b) occupational mix would induce shifts in occupational pattern.. this meant concurrent development of support facilities depending upon inter-agency coordination cattle feed development and if necessary a tie-up with e g dairy cattle programme intertwined with pasture cattle feed development, and if necessary a tie-up with milk chilling|pasturisation and marketing facility; (c) that the scale of assistance would be substantial to help in sustaining this breakthrough To lend commercial vigour it envisaged that loan component will to provided by the commercial banks alongwith managerial skills Subsidy provided by the government is a sort of margin money since the 'target group' do not have adequate resource to provide for it The state will, therefore, contribute that part as subsidy; banks will help not merely as money-lender but also as development managers to nurse economically viable projects ; (d) the programme environment should be such as to obtain popular involvement and avoid it being (the IRDP) equated as a government programme alone Educating beneficiaries about the content and intentions of IRDP is apperently essential.

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* Ibid, p (ii) also sixth plan, op. cit. p.171 ** ibid p. ii.

* Manual on LRPD, January 1980 and sixth five year plan.

Incidentally, and to government's great convenience, nowhere the term 'involvement' has been defined. In the absence of substantial redistribution of economic assets and transfer of economic and social power to the 'target group', one may wonder about the real nature of the word. Does it mean that the Plan for ameliorating rural poverty desire transition to collectivism ? Or, is this meant to appease only the ideological appetite of the rural poor, thus to contain possible repercussions on the political system ? Or, is to let the rural poor have some access to a part of the flow of funds (subsidy range from 25 per cent to 50 per cent of the scheduled loan depending who he is) to the rural sector ? Be whatever the motive, operational requirements are obvious IRDP's carrier, programme and organisational environments, shall have to have certain qualities to realise the goal. Does it have it ? In fact policy makers' failure to examine the organisational efficacy of the DS is nowhere more pronounced though recognised as urgent, than in IRDP. Is it viable to post any and every officer-personnel, in the state administration, for rural development work and get results envisaged under the IRDP ? Institutionalising target group's 'involvement', and the individual qualities, perception and motivation of programme managers working in DS have been overlooked Without going into the theory of participatory democracy or participatory management as an instrument to raise programme productivity, it can be safely summarised that there is a close connection between the programme characteristics, organisational climate, role expectation and individual's performance Let us evaluate some.

To avoid miscarriage of the resultant benefits, so very characteristic of the DS till then, utmost caution was emphasised for proper identification of the target group, viz : small farmer (SF), marginal farmer (MF), agricultural and non-agricultural labourers (AL) as defined in the Manual*. For poverty amelioration in the rural sector, proper identification of the target group is most important. Could it be realised ? Of course not About 1|5th of beneficiaries—those who could manage assistance under the IRDP, were not part of the 'target group'. This miscarriage was more pronounced in small farmers category Between the two States, Bihar and Tamil Nadu, Tamil Nadu had more beneficiaries from non-target group (Table I). To what extent IRDP could help the target group to break through poverty line ? This is the acid-test. Answer is that it did help, but marginally, in improving the economic condition—only 25 per cent of the beneficiaries could break through the PL presuming the quantification of PL by the government is adequate and socially realistic. Inter-State and intra-State variations are noticeable, e g., break through in tribal block was much lower than elsewhere; Tamil Nadu recorded a more satisfactory performance.

* *Ibid* chapter II

Economics of assistance

As stated earlier a good deal of controversy surrounds the role of commercial banks. these criticisms consider bank's attitude, if one is to summarily describe those, obscurantist inhibiting IRDP's success. Since commercial banks are basically custodian of clients' saving their disposition and approach to loaning must be fully understood to avoid being unduly critical. In view of the assigned role, and priority to IRDP, in principle banks should be more than willing to loan for bankable and viable schemes. The cliche is what would constitute viability in this case ? For example, from target group's viewpoint borrowed capital should generate enough surplus for the family to subsist, if not at a higher level then at least at the rock-bottom level after meeting the paid-out costs. Extent to which timely discharge of loan burden would enter into consideration is open to doubt. From banker's viewpoint the funded activity must generate surplus sufficient to help the beneficiary in liquidating the loan burden; instalment plus interest liability. In case the productivity and total surplus generated by the assisted activity is sizeable to harmonise these contra-interests of the two parties, it would constitute a viable proposition. But, could the assistance under IRDP attain this viability ? Let us examine

A perusal of the assisted activities in selected areas of the two States (Table II) suggest these conclusions (a) Loan's (invested capital) load bearing ratio for all categories of rural poor was positive, ratio being more than unity; (b) commonly held notion that land holding alone would lead to a positive ratio is not correct; it could be positive in non-farm activities too; and (c) assisted activities so far are not as viable as to bear a high-going interest rate characteristic of commercial banks. Nevertheless, it would help to bear in mind the sociology of this poverty trap—those below the PL would retain the surplus over paid-out costs first and foremost to feed the hungry members of the family then to pay back the loan; hence sizeable outstanding dues Presuming that this pattern will only persist till such time the family stays below the PL; in other words income|consumption level at the cut-off point (PL) would be sufficient to enable and induce the beneficiary to repay bank's loan, a highly presumptuous expectation; IRDP forced the commercial banks, thus to invest in non-viable activities (Table III). In 50 per cent cases beneficiary family could not attain viability; this half included beneficiaries who were already above the PL in pre-assistance period. This pattern is, by and large, uniform over blocks and states Since per capita per month income remained below PL, below the subsistence level, therefore, beneficiaries inability to discharge obligations to the banks Outstanding dues, under these circumstances, are bound to increase year after year and it did so happen. It has provided an excuse to the banks.

e of the prominent economic factors that lead situation are as the following : IRDP envisaged, ry, that the assistance provided should be sub- to break through PL. In practice differential (on subsidy hence on the loan) were placed enumerated activities in the list. A study of bility of various investments in economic acti- presuming productivity at the subsisting rates, d that the actual outlay has been mostly much the required economic scale and for all cate- f beneficiaries. This unrealiastic ceiling on ent, sub-optimability in capital (loan) per bene- was more pronounced in poultry farming, in tribution of other animals and for programmes l industries|artisan development. The strategy erty amelioration is to optimise the use of sur- sources available with the rural poor; domes- supplied labour. The assisted activity should, re, utilise domestic labour to such an extent e marginal productivity of labour is positive. ent of this criterion would indicate absence nployment or disguised unemployment that is sisted activity is able to generate gainful emp- t; scale of investment is adequate for the pur- d, that the operation is in economic zone of tion.

The lead bank scheme

beneficiaries, exceptions apart, were assisted gle line activity, sort of stray items, as against n proposal to provide a mix of activities app- for the beneficiary to break through PL. Con- ly, occupational diversification, shifts in occu- and|or combination of occupations, has been insignificant. Beneficiaries occupation or occu- l mix was found to be no different than those parent in both the states. On the contrary, ce under the poverty amelioration programmes, a package containing non-farm mix (industry tiary sectors), ought to have led to significant ixes But it did not. Among the prominent discouraging multiple activity support, enu- by the officials working in blocks-projects and were : lack of understanding of multiple pac- proach (29 per cent); lack of interest among aries, also being unaware of support arrange- r multiple activities (29 per cent); ceilings on that defined the size of loan available (14), and inadequacy of field staff to implement 4 per cent). Development agencies concluded le with the forwarding of the loan applications ank, thus, satisfying the allotted target. Banks y felt safe by advancing the minimum of the d that too in established lines of operation to sk as well as criticism. In areas studied here s appeared when the lead bank had a nomi- re; non-lead bank appeared as the 'leader Leader bank's operations were thwartered han facilitated due to the peculiar nature of d Bank Scheme. State Bank of India had an er others in terms of specialised support extended by their Agricultural Development Branch. Nevertheless, conclusion remain valid that functional partnership between development agencies and the banks is far from satisfactory. Resultant loss was for the target group.

Concurrent growth of sectors and infrastructure, back-up facility, is another area of neglect, e.g., dairy development without adequate pasture-cattle feed-milk collection facility; rural industries|artisans development without access to assured market and marketing facility left the vulnerable beneficiaries to fend for themselves. In this context, 60 per cent of respondents identified this deficiency as a significant cause. Some of the back-up facility needed inter-district coordination which was not forthcoming when required. Investments in such back-up facility being beyond the purview of IRDP, local authorities could not do much—integration in such matters was reported to be more on paper than real.

Consequent to such a performance, initiative of commercial banks abinitio reluctant, got further inhibited. Expectation to raise income of the target group to such an extent as to break through PL once and for ever is rather a myth than reality.

For better delivery system

In the absence of institutional and structural reforms, 'receiving mechanism' of rural poor remained essentially unaltered and impaired. What use could be the services, credit and inputs, soil and irrigation development programmes and the results of research, for such of the rural poor who have none of the endowments to utilize these production programmes ? It may be argued that emergence of responsive 'receiving mechanism' could be a long drawn affair. Be it so. What about the organisational appropriateness of the DS ? Let us have a look at the DS profile-organisational requirements in view of the unique nature of poverty amelioration programme, the IRDP

Personnel in the DS, field staff and above, were approached to enumerate and rank their perception of the programme and their assessment as how has the system operated with respect to the 'involvement' of the target group—DS response to initiate viable activities and beneficiaries attitude towards viabiity of the assisted activity. Responses were obtained through structured format and personal interviews; unstructured responses helped in listing more statements missed earlier through the structured questionnaire. Such of the statements which had very few response were deleted Agreement Index (AI) was built up; significance of rank correlation was tested at 2 per cent level; was found to be significant but for VLWs. By and large, therefore, responses are statistically significant.

Need for extension education

It is a fact that the target group, being so much poor, were not concerned so much about the viability of the activity as to obtaining subsidy and loan. Bank funding procedure is such that double financing of

the same activity could not be ruled out. Both these elements highlight the extent to which leakages in assistance are possible. Such a climate, therefore, would recommend widespread extension education to precede IRDP assistance and system development alongside the assistance. Actors at all the tiers in the DS were, by and large, unanimous about their absence. Participation of the target group has been a casualty as very little was done to realise it. Inter-agency coordination, rated to be an essential element in IRDP, particularly between the block and the bank, has been nominal than real. District level coordination faired no better. DS failure, be those the bank or the block, to undertake aggressive promotional measures was conspicuous. One has, therefore, to ask whether the DS, their organisational structure, work procedures and managerial skills (result of personnel-cadre and motivational policy) has the capability to initiate and sustain programmes of poverty amelioration under the prevailing circumstances.

The deficiencies

An attempt to evaluate the organisational environment and IRDP's deficiencies as perceived by the functionaries brought to the fore some revealing facts viz : (a) field staff with target group inter-face were few and assignments too many. As a result they concentrated more on such assistance that would render quick and conspicuous results—have no time to ascertain beneficiaries genuine interest or for innovating in activity mix, hence activities traditionally preferred got promoted further, follow-up of the investment was almost non-existent, (b) considering the role, responsibiliy and labour in promoting activities for the rural poor, functionaries felt that the reward and advancement system (a facet of personnel policy) was unattractive. Field level staff, particularly VLWs may not have much choice; but other functionaries and officials having alternatives preferred to manage transfers—do not prefer the existing organisational structure and duties as compared to options available to them; (c) Intensive and specialised training of DS personnels, in business promotion and development, is not a prominent feature. They happen to be in the DS, therefore, presumption is that they can promote it. Absence of 'induction' training was felt by most.

In brief the organisational structures lent to IRDP, programme's environment, and the absence of a rural biased personnel-cadre-reward policy have all contributed to this unsatisfactory performance. Lack of identity with DS is a serious deficiency that no amount of monetary outlay can substitute To believe that existing DS could be used to implement radically different programmes is, to say the least, foolhardy. This leads to the most important issue · whether the DS has the capability to realise programme objectives ?

What is needed ?

Events suggest that for poverty amelioration neither the theoretical framework nor the organisational climate are appropriate to realise what it has set to achieve. Poverty, fancy lebelled programmes and monetary outlays may, therefore, continue to have parallel existence and grow concurrently. Mere tinkering and semantic cosmetics cannot transform the present situation. It is possible that we may have more of the same thing, IRDP—National Rural Employment Programme, etc., more funds for them and that's all. If elites, disposition and political compulsions are indicators to future pattern, it can be safely concluded that policy would remain prisoner of the past to complete residual tasks left over by the earlier Plan. Turning to commitments for radical reforms and to start afresh seems incredible.

A word about the future. It is high time that certain facilitators are evaluated in a non-partisan manner *inter-alia* · (i) structural reforms, social restructuring, potent enough to engender responsiveness in the 'receiving mechanism' in such a way that rural poor's share in resources earmarked for the rural sector rises significantly. (ii) Organisational development (DS) : A service cadre and personnel policy for those working in rural sector such as to contain urban-elitist bias; be self-sustaining and as attractive as any other service. Organisational environment should offer comparable motivational inputs, inducements, to belong to it; be looked upon as rewarding career and not merely as an employment in the 'last resort'. (iii) A deliberate but effective shift in policy to provide amenities for a good living at project sites which hitherto have been confined to urban-metropolis like education, housing, electricity, medical, communication etc. These are must to attract and retain talent for rural development in general and for poverty amelioration in particular.

Plan priority and policy emphasis, however, do not reflect fundamental shift in the approach to poverty amelioration. Seventh Plan slogan 'food, work and productivity' is meant for whom ? For the teeming millions below the poverty line ? One wonders !

TABLE I

Identification of Beneficiaries (Bihar and Tamil Nadu)

Category of Beneficiary	Beneficiaries below Poverty Lins (PL) in Pre- and Post-Assistance Periods as % of Total Beneficiaries under IRDP		Beneficiaries breaking through PL after IRDP Assistance as of those below PL in Pre-Asstt. period
	Pre	Post	
Small Farmer (SF)	60.0	56 7	5.6
Marginal Farmer (MF)	81 2	60.2	25.9
Agriculture Labourer (AL)	83 1	57 2	30 5
All category	80 2	58.9	26.5

Note . 1. Rural Artisan merged into MF and AL categories depending upon his major activity.

2 Since Pump Sets and Rahat was not provided in TN under IRDP hence excluded to provide comparability.

TABLE II
Loan's Load Bearing Ratio of Assisted Activities

Category of Beneficiary	Instalment Load Bearing Ratio of Increased Income due to IRD Assistance under different Interest Rates in					
	Bihar		Tamil Nadu		Both States	
	@4%	14%	4%	14%	4%	14%
1	2	3	4	5	6	7
SF	1.29	1.03	1.90	1.49	1 59	1.30
MF	1.35	1 07	1.52	1.20	1 42	1.08
AL	1 33	1 05	2.58	2.02	1.97	1.48
All Categories	1.31	1.07	1 98	1.56	1 63	1.29

Note : 1 Lands load bearing ratio = Incremental income due to Assistance . Interest on loan component only plus instalment due during the year.

2. Net Income here = Gross Value of the output less paid-out costs only

TABLE III
Viability of Beneficiaries After Assistance

(In Percents)

Regions	SF		MF		AL		Overall	
	Viable	Non-Viable	Viable	Non-Viable	Viable	Non-Viable	Viable	Non-Viable
1	2	3	4	5	6	7	8	9
A. Bihar								
(i) Farm Based Activities	64 5	35 5	47 6	52 4			57 7	42.3
(ii) Non-Farm Based Activities			37 5	62 5	37 5	62 5	37 5	62.5
(iii) Overall	64 5	35 5	40 0	60 0	37 5	62 5	43 1	56 9
B. Tamil Nadu .								
(i) Farm Based Activities	62 5	37.5	46.4	53 6			50 0	50.0
(ii) Non-Farm Based Activities			43.7	56 3	52 9	47 1	48.0	52.0
(iii) Overall	62 5	37 5	44 4	55 6	52 9	47 1	48 3	51 7

TABLE IV
Programme Climate Received by Functionaries

Programme Characteristic (Statements Depicting the Profile)	Rank of the Agreement Index @ in Descending Order									
	Bank Staff		Block Staff (VLW)		Other Block Officials		Dist Project Staff		All Personne (Officials)	
	Bihar	TN	Bihar	TN	Bihar	TN	Bihar	TN	Bihar	TN
1	2	3	4	5	6	7	8	9	10	11
1 Beneficiaries are selected through a participative process, all concerned are involved	7	8	5	6	6	4	8	6	8	7
2. Block personnel wait to be approached by the target group	3	3	3	5	4	5	6	1	4	3
3 Banks go out to initiate, take initiative, to promote activities	6	2	4	1	8	7	7	4	7	4
4. Coordination at district level (later named DRDA) is smooth	5	6	N R	4	7	6	5	5	5	6
5. Coordination between the Project and Block functionaries often create difficulties	2	4	N R.	7	3	3	1	3	3	5
6. Coordination between Block and the bank has worked smoothly	8	7	6	8	5	8	2	8	6	8
7. Beneficiaries are usually unmindful to the viability of their proposal	1	1	1	3	2	2	4	2	1	1
8. There can be double financing the same beneficiary under the prevailing system	4	5	2	2	1	1	3	7	2	2

@Agreement Index = Per cent in agreement to the statement / Co-efficient of Variance — higher the value more reliable will be the agreement to the Statement highest one is given rank 1 and lowest as 8. □

Ensuring better quality of life for the poor

P. N. Sharma

In this paper, the author highlights the need for integrating economic and social development to create an impact on quality of life of the poor. He feels though IRDP has helped the targeted families in raising their income and cross the poverty line, other services like social inputs have not been delivered to them. He, therefore, calls for interlinking economic and social programmes to ensure balanced development of the poor.

THE APPROACH to Seventh Five Year Plan formulated by the Government of India has emphasised that poverty alleviation activities should not be viewed in isolation and effective linkages have to be forged with other developmental activities in the rural areas to ensure that the flow of benefits from all these schemes converge on the poverty stricken group as a package. They have to be implemented in an integrated manner with the simultaneous involvement of various disciplines or departments in a decentralised framework and the participation of the people at the grass-roots level through village Panchayats, Panchayat Samitis, Zilla Parishads, etc. Such an approach will help in the selection of projects suited to local conditions, in the timely provision of services in their appropriate sequence and in ensuring that the benefits of such programmes really reach those for whom they are intended.

IRDP not adequate ?

This kind of re-emphasis in the approach paper has come in the wake of past experience of implementation of Integrated Rural Development Programme (IRDP) which clearly shows that, while the IRDP has helped the targeted families in augmenting their income and to cross the poverty line, yet the desired improvement in the overall quality of their life has not been brought about. It is, therefore, obvious that other services, particularly social inputs, have not been delivered to them. This underlines the need of convergence of services and interlinking of economic and social development programmes for the poor.

The above approach, as a matter of fact reflects the continuity of thought from the Fifth Five Year Plan onwards in which the concept of a frontal attack on poverty was mooted out. This kind of approach ideological terms also reflects the changing perceptions of planning and development not only at the national level but at the international level also This change came in the wake of the failure to tackle the problems of poverty by the models and paradigms which laid exclusive importance on economic growth and neglected altogether the aspect of distributive justice. The changing perceptions of development and planning are reflected both at the theoretical plane and the strategies and approaches adopted by the policy makers and practitioners in the field. The emphasis of development has shifted from economic growth to non-economic objectives resulting from the challenge and the vision of eradicating poverty and opening up new lives and opportunities for hundreds of millions of people. There is also a growing realisation that few development problems are narrowly economic ones and that the difficulties often lie with human attitudes, social institutions and political power structure. Therefore, the development process and development planning should take into account all these factors.

In the context of a direct and speedier attack on poverty it has been realised that the basic problem is not only that of reduction in unequality but also of inaccessibility of basic amenities of life to the poor

There was a need not only to provide adequate earning opportunities for the poor to purchase the necessities of life but also ensuring access to the provision of public services such as education, health and potable water. The implications are that, at the theoretical plane, disaggregated objectives like different types of employment and satisfaction of specific human needs especially of the poorer sections of the society should be accepted as criteria of development instead of highly aggregated objectives like 'national income' and 'growth rates'. It was emphasized that indicators of income and its growth should be ultimately reflected into a strategy for satisfaction of basic needs.

Why frontal attack on poverty

One of the major outcome of the new streams of thought is that whatever key services are identified for the poor they must be provided as a package and that there should be a frontal attack on all major problems associated with poverty. The following quotation of Tibor Mende in Gunnar Myrdal's 'Asian Drama' brings into sharp focus the inescapable need for a frontal attack on poverty :.....no country has seen a frontal attack on all the major problems at the same time. I should like to remark here that I am absolutely convinced that, sociologically speaking, one of the reasons for the communists' success wherever they are active is that they go on attacking all the major problems simultaneously. In an inert society where the deformations of the past have accumulated, you are exactly in the same situation as the man who cuts a clearing in the jungle, if you go on attacking one problem, that clearing will not resist the jungle when it grows back, it will disappear. Either you go at its seriously or better you do not touch it, because you will be disillusioned. I think this is what has been happening in south east Asia. They have attacked one problem at a time. . But anyway I think it is important to realise that to create the general dynamism which makes people work wonders—you see sometimes in these communist countries that people do extra-ordinary things which statistically speaking are not expected of them—it is necessary that they go on attacking all the problems simultaneously and generate this almost superhuman enthusiasm which makes people do extraordinary things....... . . ."

The convergence of services for the poor assumes greater significance in the context of breaking the vicious circle in which the poor countries like India are caught. This vicious circle of mal-nutrition low productivity-low health status-low literacy-poor living conditions—poverty is difficult to break unless a frontal attack with a complete package of measures is launched. In poverty-stricken countries insufficient food in terms of both quantity and quality during childhood affects the health conditions of the next generation Malnutrition makes the human body susceptible to many kinds of disease thus having an adverse effect on the productivity of the individual and the society Again, because the mothers suffer from mal-utrition the infant mortality is high. Therefore, mothers want to bear larger number of children to insure against early death, of their babies. Due to poverty there will not be sufficient number of hospitals and clinics. Communication and transportation will be inferior. Little electricity will be supplied to villages and darkness of night will halt or hamper many socio-cultural or economic activities. Illiteracy will stay high because of malnutrition of children and financial difficulties in maintaining schools and also because of the children having some contribution to the household or other activities. Most people will stay in agriculture in which the incentive for having a small family is not that strong and the population continues to grow beyond the capacity to sustain and scarcity and maldistribution of productive resources continue to aggravate the problems of poverty.

This output-input circle

It becomes amply clear from the above that planning for a particular service cannot be done in isolation as these services and inputs are so inextricably inter-linked that output from one sector becomes an input for the other sector. For example, improved health as an output of health sector may be an end in itself, but as a means, it becomes an input for all economic development programmes as it enhances people's capability to work with full vigour for their own development by stimulating action and organisation for accelerating the process of development. Besides the economic development, good health also becomes an input for the education sector. Similarly, the impact on health, of investment in sanitation facilities, can be increased manifold through education in personal hygiene. The effectiveness of expenditure on health itself is itself critically linked to improvements in the public distribution system for essential goods. Again, medical and health services are likely to be ineffective if people are chronically malnourised, drink germ infested water, have no sanitation facilities and follow poor health practices in their personal lives.

It may also happen that, in extreme cases, action in one sector without corresponding action in others can even be counter productive, e.g., if a water supply system is installed without drainage, germs and insects that spread diseases will continue to be attracted. More often it is expensive to pursue a programme in one sector without synchronising it with other sectors. For instance, in terms of gross domestic product (GDP) committed, Sri Lanka and Mali have placed the same amount of emphasis on health and education but Sri Lanka has had better results partly because its programmes recognized linkages and complementarities between different sectors

Why convergence of services ?

The need of convergence of services for the poor was realised even during the Sixth Five Year Plan. Instructions to this effect were issued by the Govern-

ment of India to various State Governments as far back as in 1982, to follow the model adopted by Gujart State which was pioneer in this field. Following the Gujarat pattern, it was impressed upon the other States that the beneficiaries selected under IRDP should invariably by the recepients of facilities and benefits provided under the sectors of different social services and the Minimum Needs Programme. It was emphasized that the household centred poverty alleviation strategy should consist of steps not only for the economic development of families but also education of their children, health and welfare of the vulnerable members of the families identified under the programme. In the instructions issued by the Government of Gujarat it has been pointed out that the families living below the poverty line were so far assisted by extending a policy on piece-meal basic for increasing their income. But there was no integrated approach in these directions. It was, therefore, necessary that a detailed survey of the beneficiary families should be undertaken to find out their existing condition and their felt needs. Alongwith the economic activities, if attention is paid to the programme concerning health, education, housing, etc., it would be possible to raise their quality of life also. In this connection the Gujarat Government has impressed upon the field functionaries that all the 600 families identified per year in a block under IRDP should be issued a family book through the block development officers This book will have the following details :

(a) The economic assets and property of the family.

(b) The number of members in the family and their educational status.

(c) Loan obtained by the family and details regarding other debts

(d). Details about the health of the family members such as family welfare, inoculation etc.

The block development officer has been made responsible for overall coordination and maintenance of the family book. The medical officer of the concerned primary health centre will plan for providing health services to the members of the targeted families These families will have to be covered under various health programmes, viz., inoculation, mother and child care, family welfare, etc. The medical officer will make appropriate entries in the columns of the family book concerning the action taken for the health programme The DRDA will furnish the details of the identified families to the concerned primary health centres. Similarly, the assistant district education inspectors and extension officers will supervise the enrolment and regular attendance in primary school in which the children of the targeted families are enrolled At the district level, the district primary education officer will coordinate the programme of education and the DRDA will send a list of a targeted families to the district primary education officer

The Gujarat Government have also issued instructions that the targeted families will be included in the state plan schemes of distribution of house sites and construction of residential buildings. It has also been suggested that the monitoring of IRDP will not be restricted to ensure the fulfilment of the target but will help the targeted families in taking up economic and social activities indicating as to whether the targeted families have taken up the activities as planned and succeeded in increasing the income. Through monitoring it would also be found that whether there have been any impediments in the execution of activities undertaken and thereby to find out whether the family is planned economically and socially on a sound footing.

Social aspect ignored !

Inspite of these instructions the idea of convergence has not yet picked up with the field functionaries. The major reason for this is the attitude of these functionaries according to which due significance is not attached to social aspects of development. Most of us have been brought up in the administrative culture in which economic development has been conceived as the only solution to tackle the problem of poverty. First of all, therefore, we have to bring attitudinal changes in the functionaries to realise the importance of social development as an integrat part of the process of development. This can be done through specially designed training programmes workshops seminars and conferences Involvement of social planners in designing and conducting such programmes would go a long way in creating development oriented administrative culture which focuses on the convergence of services for the poor and a frontal attack on poverty

There has been some methodological problems also In the methodology evolved by the Gujarat government holistic approach is missing The approach again suffers from ad hocism and a systematic procedure has not been laid down. In the family book, the whole details about the family members should be included and social indicators should be generated through it so that a bench mark becomes available to the field functionaries against which the impact of all the programmes is measured after some time This bench mark would also help in monitoring of the programmes It will also be necessary then to formulate a plan for an area which takes into account the forward and backward linkages between economic and social development programmes.

New methodology needed ?

As a matter of fact planning and implementation for convergence of services for the poor requires altogether a new methodology which is quite different from the conventional methodologies. In this context balanced economic and social development has been defined as development which implies both the growth that may be measured quantitatively and the

changes of a social and cultural nature which are qualitative and do not lend themselves to quantitative measurement. The artificial dichotomy between economic and social phenonena in development should be removed and more attention should be paid to the facts often neglected by economists and inappropriately labelled 'social'. Another basic difference in this methodology is that the people, especially the target group, are actively involved in formulation and implementation and monitoring of the progress.

The new methodology which is also termed as social planning proceeds logically and sequentially so that the programme design is based on the problems and felt needs of the area and specified objectives taking these into account and finally related to the ultimate goal of development. These objectives which denote quantifiable changes in the conditions of beneficiaries, therefore, depend upon the existing situation in an area vis-a-vis the desired level which is generally determined in the context of national or state level objectives. It may be mentioned that the goal is a broad value statement which refers to the fundamental consideration that should be taken into account in formulation of criteria for development, while the objectives are specific and quantifiable and thus capable of being measured. These have to be spelt out in details indicating the existing level of development and the desired level to be achieved in a particular aspect of life or activity proposed under a particular programme For example, if we assume that the ultimate goal of the integrated rural development programme is to bring about improvement in the overall quality of life of the poor, a number of objectives would have to be fixed which will include raising of income levels from a given level to the level where the beneficiary is able to cross the poverty line and to bring about improvement in his health and educational status etc.

Why situation analysis ?

It should be further kept in view that a number of objectives may be necessary to achieve a single goal and the choice of inter-related objectives becomes the strategy for development of the area. However, before proceeding to formulate either the objectives or the programme design in terms of time-bound targets and clear-cut steps for implementation, it would be necessary to have an intimate knowledge of the area and the beneficiaries and also the on-going programmes and their weaknesses. The former will consist of identification of potentialities of and constraints to development of the area and other kinds of barriers including socio-cultural barriers This exercise is called context analysis. As a part of this exercise certain indicators of performance including social indicators are also developed to provide a benchmark against which the impact of the programme would be measured at regular time intervals during implementation stage as also the evaluation after the programme is wound up. In the latter exercise called sectoral analysis, an attempt is made to appraise the ongoing programmes and to identify the crucial gaps in their implementation. Both these steps are taken simultaneously and the combined exercise is called situation analysis. The situation analysis leads to formulation of realistic objectives and it also helps in programme formulation in the sense that first of all those inputs or schemes are designed which would improve the ongoing programmes and subsequently those schemes are suggested which are additive. This saves lot of wastage and duplication of programmes because generally new programmes are proposed in an area for the same objectives without looking into the performance of ongoing activities. It needs to be emphasised that the exercise of identification of gaps should not be confined to quantitative aspects only; the qualitative gaps should also be brought into focus.

The next step in plan formulation for the convergence of services should be the assessment of existing and required resources and their mobilisation at the local level. The people's own resources should be taken into account. In the programme design, the activities|components to be managed by the community should be clearly defined since people's participation is an essential precondition for the successful implementation of the integrated rural development programme. The people's involvement should not be thought of in indirect terms. Their direct participation, particularly of the target groups in selection of beneficiaries, selection of projects, repayment of loan and ensuring other linkages is very important. It is also necessary that an appropriate organisaticnal structure is designed for programme implementation so that there are no problems of coordination and integration because the convergence of services involves complex relationships between schemes and therefore between implementing agencies. All these agencies have their own strength and weaknesses, skills and unique capabilities. Different schemes under integrated rural development require different external support and agents of change. At different levels they have different roles. For example, at the district level there is a need for project formulation capabilities while at the village level motivational skills are needed. Besides the official agencies there may be some voluntary agencies also working in the area. The organisational framework should, therefore, be so designed as to be capable of coordinating effectively the delivery of services and inputs in order that a synergic effect through convergence of services is created.

Need for participatory monitoring!

Finally, to ensure rigorous implementation of the programme of convergence of services, an efficient system of participatory monitoring should be developed. Participatory monitoring is carried out by the people directly and the target group provides a direct feedback to the government functionaries responsible for implementation of the programme.

In the case of integrated rural development programme, apart from the efficiency of operation, effectiveness of the programme is very important. Many times the implementation of a programme may be very good but its effectiveness in terms of meeting the desired goal and objectives may not be upto the mark. In such cases evaluation of the programme should be done by the people especially the beneficiaries at various intervals and the correctives emerging out of this exercise should be applied. It would not be out of place to mention here that the present scheme of monitoring for IRDP includes some key indicators which are related to economic aspects only. The proforma prescribed by the Government of India, calls for the information from the District Rural Development Agencies regarding disbursement of credit and subsidy. In the context of convergence of services, the proforma will have to be revised so that they also include information on the provision of social inputs and ancillary services. Some indicators regarding health education, drinking water, living conditions, etc. will have to be included in the progress reports. As prescribed by the Government of India, the family book called 'Vikas Patrika' also does not have columns regarding the provision of social inputs. Therefore, in the family book also certain social indicators will have to be included so that the progress achieved in the matter of improvement in the health and educational status of the household is also recorded. This will go a long way in creating a perceptible impact on the quality of life of the beneficiary family and also its monitoring from time to time.

Quality of life, the criterion

It may be summarised that the major task of planning for convergence of services is to ensure a continuous and efficient delivery of services and inputs to accelerate the development process while having a perceptible impact on quality of life of the poor. This kind of planning acts as an instrument to achieve certain goals which may again be disaggregated into a number of quantifiable objectives. Therefore, the planning exercise in this case proceeds on a clear-cut analysis of the goals of development, specified and quantifiable objectives fixed on the basis of problems| stresses of the community|area. On the basis of specific objectves, the inputs are decided and the targets are fixed for a particular area.

Another aspect of this kind of planning is that the delivery of services and inputs cannot be considered in isolation of the people; unless the services are related to the felt-needs and aspirations of the poor they cannot be utilised fully. Therefore, planning exercise should be related to fulfilment of specific objectives and participation of the poor is an important ingredient which should be kept into focus while designing schemes for their upliftment as an integral part of the overall development plan programmes, the ways and methods as to how they should be implemented should be the sole decision of the intended beneficiaries.

Planning of IRDP, therefore, should be seen as a two-way process. On the one hand is the 'delivery system' or the government agency and on the other hand are the people which collectively are called 'receiving mechanism'. In brief this planning methodology has the following major constituent steps :

— First of all the goals of IRDP should be defined keeping in view the larger value system under which the society is operating,

— A number of objectives should be defined keeping in view the problems and stresses in the area of operation which would emerge after a comprehensive situation analysis;

— More than one objective may be necessary to achieve a single goal and the choice of the set of objectives becomes the strategy of the programme.

— Objectives are quantifiable changes in the conditions of beneficiaries.

— Appraisal of on-going programmes should be taken up to identify gaps in quantitative as well as qualitative terms. It develops insight into programme formulation with a package of schemes which are called here as inputs necessary to achieve the above objectives.

— Coverage defines the beneficiaries and their spatial locations;

— The output would be measured in terms of the objectives, and

— Finally the out-come of the programme will be in terms of improvement not only in the concerned areas but also in related areas;

The purpose of the planning exercise should, therefore, be two-fold. On the one hand it would aim at the convergence of services and on the other it should aim at creating an integrated institutional framework which would control and involve the poor in implementation of development programmes while mobilising locally available resources. □

(Continued from page 12)

primary schools For this purpose, they will have to mobilise adequate resources wherever possible and where it is not possible the Centre can go to their help. A pre-requisite for this policy is the division by the States of their blocks into categories depending on their ability and releasing grants accordingly. In conclusion, we would stress the need for a bigger research and study of the field of educational finance. It has also to be ensured that educational finance is taken up as an important field of academic inquiry so that there can be greater support available for policy making at the official level. □

Planning for poverty alleviation

Anubhuti Rajan Prasad

Over 40 per cent of our population still lives below the poverty line. The author feels that only a smaller proportion of the total plan resources should go into capital-intensive new projects. More efficient use be made of the capital assets that have already been built up in both industry and agriculture. The money thus saved can go in for programmes for the physical well-being of the poor. The author is also of the view that employment generation schemes should be implemented faithfully and vigorously and competition among employers encouraged for better wages to the workers..

IN INDIA, consumption-expenditure has been made the basis for the measurement of the minimum standard. The poverty level is expressed in terms of an overall per capita consumption-expenditure which ensures a certain minimum calorie-intake. All those who cannot undertake consumption-expenditure required for the minimum calorie-intake, fall below the poverty line.

In the Report of the "Task Force on Projections of Minimum Needs and Effective Consumption Demand" set by the Planning Commission in 1977, the poverty line is defined as the mid-point of the monthly per capita expenditure class having a daily caloric intake of 2,400 per person in rural areas and 2,100 in urban areas. In 1979-80 prices, the mid-points are Rs. 76 in rural areas, and Rs. 88 in urban areas.

Massive rural poverty !

A large majority of the poor live in rural areas. An analysis of data shows that nearly half of our population has been living below the poverty line. The percentage of people living below the poverty line are presented in Table 1 below :

TABLE 1

Percentage of people below the poverty line

Area	1972-73	1977-
1. Rural	54 09	50 8
2. Urban . . .	41 22	31 19
3. All India . . .	51 49	48.13

Source . Sixth Five Year Plan.

Over the years, change in percentage of poor is little indeed. Out of total population of 629.0 million in 1977-78, 302.8 million (or 48.1 per cent) were below the poverty line. The concentration of such people in the rural sector is evident from the fact that 251.7 million out of 302.8 million (i.e., 83.12 per cent) people were in rural areas. The number of people below poverty line was nearly 292.3 million in 1980-81 and 280.2 million in 1981-82. Consequent upon the result of the 32nd Round of National Sample Survey, it is estimated that the poverty percentage will be reduced from 48.44 per cent in the base year 1979-80 to 38 93 per cent in 1984-85.

Poor people in rural areas are the landless labourers, small and marginal farmers, fishermen and those belonging to backward classes and backward tribes, etc. The poor in rural areas either have no assets or have low productivity assets keeping their income low. They are mostly unskilled labourers and do not have regular full time jobs. Even those who get some work are paid very low wages. In urban areas the proportion of the population below the poverty with irregular employment and at very low wages.

Why so much poverty ?

When there is a recession, unemployment increases the proportion of the population below the poverty line. Prosperity brings more jobs, especially for marginal members of the labour force.

A closely related fact is that poverty piles up in periods of slow economic growth. An individual's incomes depend primarily on the marginal productivity of their labour and the capital they own. If this is correct, given a reasonable level of aggregate demand, poor people in the labour market are, by and large, poor because their marginal revenue productivity is low. They are poor because they are not worth more to employers in a profit-motivated sector of the economy.

If there is effective competition among employers, this competition will bring the wage of each worker up to the value of his marginal product. And the value of his marginal product will be highest where he makes the greatest contribution to producing goods and services that consumers want to buy. Conversely, if there are market imperfections that prevent workers from finding employment where their productivity is highest or that prevent effective competition from forcing wages up to that level, society's resources are not most effectively allocated, and workers do not earn the maximum incomes they could obtain in a competitive economy.

Beyond these economic causes, there is a socio-economic factor. Poverty breeds poverty, in a vicious circle. A poor individual or family has a high probability of staying poor. The poor live largely in slums or in backward rural areas. Their children do not learn to read, write, or even speak well. They grow up amid apathy or resentment, and they go to poor schools with other poor children. When the poor are sick, they stay sick longer because they have inadequate medical care Thus, they find it harder to keep jobs. Often, there is little motivation or hope to rise from the vicious circle of poverty, either for the young or adults

Antipoverty policies

The emergence of mass poverty alongside growth highlights the need for some radical remedy. While discussing programmes for the eradication of poverty, these should concern with growth of employment and income in various sectors like agriculture and allied activities, construction, industries, etc. A part of the gains flow to the poor also There are then the benefits that accrue to the poor through the extension of social services by the government. These include education, health and family welfare, housing, water supply and sanitation, etc. Together these increase the contents of standard of living of the poor.

To speed up economic growth

As a closely related measure, accelerating economic growth over the long-run (i.e., faster growth in output per capita) provides a fundamental approach to eroding poverty. The most accepted and widely used index for indicating growth is the real per capita income over many years, spread over decades. Gerald M. Meier defines "... economic development as the process whereby the real per capita income of a country increases over a long period of time." The substance of this definition is that it is the availability of more goods and services per head that reflects growth. This is possible if the growth-rate of national income exceeds the growth rate of population. No improvement in the standard of living can be envisaged unless the index of national income shows a rise.

The data in respect of the growth rates are given in Table 2. The highest growth-rate in national income was recorded in the Fifth Plan and also the Sixth Plan, at 5.2 per cent. The lowest was in the third Plan at 2.2 per cent The per capita income, consequent upon variation in population growth has also varied. The highest growth-rate was in the Fifth Plan at 2.9 per cent and in the Sixth Plan at about 3 per cent, and the lowest in the Fourth Plan at 1 1 per cent. In between these two extremes were the growth-rates of the other Plans

Table 2

Growth Rates (Actual and Targets) of National Income and Per Capita Income

(Percentages)

Plan	National Income (Target)	National Income (Actual)	Per Capita Income
1 First Plan (1951-1956)	2 1	3 6	1 7
2 Second Plan (1956-1961)	4 2	4 0	2 0
3 Third Plan (1961-1966)	5 6	2 2	—0 9
4 Three Annual Plans (1966-1969)		4 0	1 8
5 Fourth Plan (1969-1974)	5 7	3 3	1 1
6 Fifth Plan 1974-1978)	4 4	5 2	2 9
7 Sixth Plan (1980-1985)	5 2	5 2	3.0

Sources : Sixth Five Year Plan

Except for the first Plan and the fifth Plan, the growth rates have been less than the targets fixed in the Plans. India has 15.5 per cent of the world's population and 1.5 per cent of its income. In the 1950's Thailand and South Korea were at about the same economic level as India. But today the per capita income of Thailand is US $ 800. and South Korea's is US $ 1900. as compared to India's US $ 270.

Why slow economic growth ?

The high capital-output ratio (the quantum of investment and its productivity) largely explains the

slow growth of the economy. As shown in Table 3 below, the capital-output (C—O) ratio worsened in the Second, the Third and the Fourth Plans moving

TABLE 3

Incremental Gross Capital-Output Ratio

Plan	C-O ratio
1. First Plan (1951-1956)	3.2
2. Second Plan (1956-1961)	4 1
3. Third Plan (1961-1966)	5.4
4. Three Annual Plans (1966-1969)	4.9
5. Fourth Plan (1969-1974)	5.7
6. Fifth Plan (1974-1978)	3.9

Source · Five Year Plans of Various Years

from 3.2 in the first Plan to 5 7 in the fourth Plan. It means that for every unit of additional output an increasing amount of capital has to be employed. The reason of the worsening of the C-O ratio is that since the First Plan and particularly during the Second, the Third and to an extent in the Fourth Plan, the objective of rapid development of heavy and capital-goods industries remained at the top of the list of priorities. This worsening was carried further with a shift in the composition of the investment from engineering to chemical industries which are very capital-intensive; the sharp rise in the real cost of building capital-stock, particularly in such sectors as irrigation, minerals, etc., delays in the completion of projects etc.; inefficiency in the utilization of capital-stocks; the under-utilization in key infrastructural assets as power and railways affecting other industries also; and an inadequate synchronization in the implementation of inter-linked projects (e.g. coal railways etc.), and so on and so forth.

For the Seventh Plan, the target of growth in GNP per annum has to be 5 2 per cent and the capital-output ratio of 6 to 1. On the assumption of a saving rate of 26 per cent, a growth rate of 4 and not 5 per cent is calculated. So long as the C-O ratio comes down more rapidly than the rate of saving, the rate of growth of GNP will continue to rise. The crucial variable on which planners must, therefore, work is not the rate of saving or investment in the economy but the capital-output ratio.

In India, glaring inequalities exist which, despite slight improvements here and there, have persisted over the years. An indication of the wide distance separating the rich from the poor in India can be had from the fact that in 1967-68, while the private consumption expenditure of the bottom 5 per cent people was Rs. 78 at 1960-61 prices, it was Rs 1,350 for the top 5 per cent of the population A similar pattern continues to exist for 1973-74

It has been estimated by the noted economist, B. S. Minhas that the average per capita consumption expenditure of the 5 per cent at the bottom comes to be Rs. 88 at 1960-61 prices and for the 5 per cent at the top it is Rs. 932. Different states in the country too differ to a large extent in terms of income-distribution. This is evident from the average per capita income of different states given in Table 4. States like Bihar, Manipur and Madhya Pradesh are very poor indeed, These stand far below some prosperous states like Punjab, Maharashtra and Gujarat whose per capita incomes are more than 2 to 3 times higher. In between the differences may be less, but leaving the broad picture of gross inequalities intact.

Two pronged attack

There are, thus, two broad lines of attack on the poverty problem. One involves raising the demand for the services of the poor and their marginal productivity in the market. The other, involves direct redistribution of income from the better-off to the poor. The former is obviously preferable, since it increases the real output of society, while the latter merely redistributes the existing level of output.

TABLE 4

Per Capita Income at Current Prices and Percentage of Population below Poverty Line in States (1979-80)

States	Per Capita Income (Rs)	Percentage of Population below Poverty Line
1 Andhra Pradesh	1176	42 18
2 Assam	960	51 10
3 Bihar	773	57.49
4. Gujarat	1632	35 04
5 Haryana (1978-79)	1600	24.84
6 Himachal Pradesh	1317	27 23
7. Jammu & Kashmir	1145	34.06
8 Karnataka	1267	48.34
9. Kerala	1091	46.95
10. Madhya Pradesh	828	57.73
11. Maharashtra	1903	47.71
12 Manipur	822	29.71
13. Meghalaya	N.A.	48.03
14 Nagaland	N.A	4 11
15. Orissa	931	66.40
16 Punjab	2278	15.13
17. Rajasthan	913	33 76
18. Sikkim	N.A.	N.A.
19. Tamil Nadu	1350	52.12
20 Tripura	861	59.73
21. Uttar Pradesh	981	50.09
22. West Bengal	1330	52.54

Sources : Statistical Outline of India, 1982, Economic Survey, 1981-82.

Concentration on a higher GNP growth target will not wipe out poverty particularly in a developing country like India. The government, therefore, should not only aim at increasing growth rate in GNP alone rather it should also worry about the content of

GNP. The nature of the goods and services which make up the GNP is of greater relevance. Ever since the adoption of the strategy for massive creation of capital-intensive industries, there has been a slower growth in the production of such items of consumption as cereals, pulses, edible oils, cloth, kerosene, etc. With the shortage in supply of such items, their prices have also been on the rise, putting these goods beyond the purchasing capacity of a substantial part of population. The government should, therefore, aim at a smaller proportion of the total Plan resources to go into capital-intensive new projects and increase output by making a far more efficient use of the capital assets that have already been built up in both agriculture and industry. The money that is saved can then go into programmes that improve greatly the physical well-being of the people and the environment in which they live.

Unemployment and poverty

Poverty, in fact, is nothing but yet another name of unemployment. The employment generation policy conceived somewhat on the right lines has suffered from inadequate implementation and which has to contribute much towards the alleviation of poverty has done little. Under employment planning, a full use of labour surpluses is yet to be provided for Production has not as yet been adequately biased in favour of labour. While fiscal concessions are available for capital-use nothing|little is given for labour use. In fact, there is altogther no such approach which contemplates planning with labour as resource.

By the end of the Fourth Plan, quite significant additions had already taken place in the capital-stocks of the country. It was virtually the fifth Plan that broke new grounds by specially providing for the poor in terms of minimum needs to be met Employment programmes too were given prominence. Having built-up a large capital stock, the country can afford a shift in favour of wage-goods strategy for the sake of employment and removal of poverty. The expansion in wage-goods should be large enough to sustain further expansion of wage-goods industries and to create surpluses for creating employment in other sectors, particularly in rural capital formation. Rapid increase in the wage-goods surpluses would mean employment, higher wages and eradication of poverty.

Investment in human beings increases their productivity, just as does investment in non-human wealth. The poor live in slums, in squalor They receive short and poor education. They get little job training in schools—or on the job because they so often find no employment. They receive inadequate medical care. If we want to increase the productivity of many of the poor, more investment in education and training is essential.

Many of the poor are effectively isolated from jobs by lack of information, immobility, and inertia. Better job training programmes, employment exchanges, guidance and counselling services, and the like could help those who suffer merely from inadequate information or are immobile because of financial difficulties. Better information, better education, and better training programmes for both youth and adults make sense both to fight poverty and to improve the efficiency of our economic system.

Population and income

Poverty of the Indian population is largely caused by the population itself. Indian population statistics show that the rate of population growth prior to 1921 was slow and erratic while subsequent to 1921 it has been maintaining a steady upward trend. The population growth rate during 1951—61 was nearly 2.2 per cent per annum. According to the 1971 Census findings, our population increased at the rate of 2.5 per cent during 1961—71. The 1981 Census results show a somewhat similar increase, i.e., 2.5 per cent growth rate during 1971—81.

In an approach to the seventh Plan, the capital-output ratio is assumed to be 6 to 1, i.e., for the production of one unit of output, six units of capital will be required. To enable the additional population to maintain the same per capita income, it would be necessary to make investment of the order of 15 per cent (2.5×6). Thus, in India, fifteen per cent *capital accumulation is essential for* 'demographic investment' to maintain the existing level of living In the context of the poverty of the people, a fast rising population hinders the process of capital accumulation. The addition to population means additions to the large number of existing consumers. The new-born, till they reach the working age, are simply unproductive consumers. The total consumption will rise. Given the level of production or income, an increase in consumption will mean less saving The reduction in saving will adversely affect investment or capital formation.

If, during the seventh Plan period, the objective laid down to raise the per capita income is by 5 per cent then further resources for 'economic investment' of the order of 30 per cent (5×6) will be necessary In this way, to bring about an increase of 5 per cent in per capita income, an investment of 45 per cent (15 per cent for demographic investment and 30 per cent economic investment) will be required. Considering that no country has ever achieved this rate for long, this is an impossibility.

The 'Demographic investment' has, therefore, largely impeded all attempts at raising the per capita income. Between 1950-51 and 1984-85, the average annual growth in national income has been around 4 per cent (see Table 2). On an average, the fast growing population has cut into the rise in per capita income to about 2.5 per cent a year. Given the rise

in national income, a large increase in population must result in a smaller rise in per capita income. Rapid population growth, thus, is an obstacle in the way of rising the growth rate and jeopardises attempt at raising per capita income and standard of living.

Careful population planning is an urgent necessity in India or otherwise, population growth would tend to eat up economic growth in a marked manner. By means of planning we should simultaneously (i) aim at slowing down the rate of population growth and (ii) accomplish a rate of economic development which would give us a more favourable ratio of resources to population so that our people can enjoy better standard of living.

Poverty alleviation programmes

There are several programmes especially designed to tackle the problem of poverty in operation Of these many programmes, we may detail out only two, namely, IRDP and NREP.

(i) IRDP : The primary objective of the Integrated Rural Development Programme (IRDP) is to generate additional employment and raise the income level of the identified groups The target groups are small|marginal farmers, landless labourers, share croppers, rural artisans, etc. who are below the poverty line. With 5,000 blocks in the country, the sixth Plan (1980—85) aimed at covering 15 million families| households or 75 million people, i.e., more than 13 per cent of the rural population The approach of the IRDP lies in adopting the family as a unit which is helped to undertake productive investment A total investment of Rs 1,500 crores was earmarked during the five-year period of the Plan With these transfers of assets, it has been estimated that an income of Rs. 3,000 crores per annum will be generated and nearly 11 per cent of the rural population will be lifted above the poverty-line.

(ii) National Rural Employment Programme (NREP), initially known as the Food for Work Programme, acts as a major instrument of rural development and employment. The programme is executed through part or whole payment in food for the generation of employment in a productive manner, i.e., by the creation of assets The items of asset-formation covered are : construction of major, medium and minor works; forestry works; rural roads, panchayat ghar; flood protection; drainage and anti-water logging works; community centres; drinking water supply schemes; etc. The programme has the impact of raising the level of minimum wages, and thereby to improve income and the nutritional levels of those below the poverty-line. It is estimated that the NREP will create employment for 4,000 million standard person years. Any person working 8 hours a day for 273 days of the year is regarded as employed on a standard person-year basis.

Conclusion

Poverty alleviation through economic planning requires several inter-related measures · giving high priority to the change in the composition of GNP in favour of consumer-goods|wage-goods, so that the growth of national income itself embodies the supply of output for the poor and for the employment generation; large government resources to be devoted to the supply of public consumption-goods; redistribution of assets, e g., land in villages in favour of small-marginal farmers; promotion of employment generating industries with emphasis on efficiency; redistributive policies to curb concentration of non-land wealth; etc In short, the government should chalk-out its strategy in such a fashion that highest priority is given to the eradication of poverty.

Central Agricultural University for North-eastern region

A Central Agricultural University is proposed to be set up soon in North-Eastern region as part of the Seventh Plan strategy to expand agricultural education in that part of India Besides, it will also disseminate new agricultural technology

The Government of India has conferred the status of a deemed University on the Indian Veterinary Research Institute. Similar status is also sought to be given to the National Dairy Research Institute and the Central Institute for Fisheries Education, it is reliably learned.

New design of cigarette packages

The Ministry of Finance has made it obligatory for cigarette manufacturers to have the surface design of packages of cigarettes intended for retail sale approved by the Director (Audit) in the Directorate of Inspection and Audit (Customs and Central Excise), New Delhi in order to get the benefit of the concessional rate of excise duty on cigarettes which are prescribed under the notification dated September 2, 1985 issued by the Department of Revenue. This Scheme has came into effect from October 1, 1985.

This decision has been taken in view of the fact that certain manufacturers of cigarettes were making deceptively similar brands of cigarettes bearing declaration of different sale prices on the packages with the intention of paying lower excise duty on such deceptively similar brands.

More R&D units recognised

Under a scheme for granting recognition to the in-house Research and Development units in industrial sector and private or public-funded R & D laboratories, the Union Department of Scientific and Industrial Research (DSIR) has so far recognised more than 900 in-house R & D units. The scheme is being operated since 1973 and covers various sectors, namely chemicals, electrical, mechanical, electronics, automobile and textiles.

One of the objects of this scheme is to provide liberalised import facility to recognised R & D units. These units can now import under Open General Licence, equipments, components, raw materials etc. to carry out research for upgrading the technology, improving manufacturing process, introducing new products|processes and developing substitute for imported items.

The R & D expenditure incurred by in-house R&D centres during 1983-84 was around Rs. 400 crore. While 200, units incurred expenditure of more than Rs. 25 lakh each on R & D during 1983-84, 64 companies incurred an expenditure of more than Rs. 1 crore each.

There has also been a steady increase in the R&D manpower employed in in-house R & D centres As against 13,000 R & D personnel employed in nearly 400 recognised R & D units in 1975-76, the R & D manpower went upto 41 000 in nearly 750 units in 1981-82. The present estimated manpower for nearly 900 in-house R & D units is about 45,000.

Simultaneously the R & D assets of the in-house R & D units have also increased. These are worth Rs. 600 crore at present.

Several measures are also being taken to establish workable linkages between national laboratories and the industry. One such linkage is promoting industrial research in industry itself. Providing equity and loans to public sector undertakings has also resulted in their establishing in-house R&D units. Simultaneously several tax incentives have also been provided for encouraging private sector industrial units to establish their own in-house R&D centres. □

Five per cent cut in non-plan expenditure

The Union Government has decided that a minimum of five per cent reduction should be effected in the total non-plan provision made for each Ministry and Department of the Central Government.

In pursuance of this decision, all ministries and departments have been asked to immediately review the various non-plan provisions made in the current year's budget and the first batch of supplementary grants if any and indicate the details of the savings proposed to be effected to the Ministry of Finance by the end of September. It has also been pointed out that the reductions suggested should be real and notional items like depreciation provisions, transfer to reserve funds and provisions for aid material, etc., should not be counted as items of reduction. The provision for pay and allowances and travelling allowance is one of the areas which has been identified for close review for effecting possible economy.

Commercial undertakings run by government departments have been asked to reduce non-essential items of operational expenses without affecting their revenue potential.

The Bureau of Public Enterprises has issued separate instructions on economy measures relating to public sector enterprises. Public sector units have been asked to ensure generation of internal resources and also to meet in full the interest repayment and dividend obligations to Government as assumed in the Budget. □

More staff quarters for Central employees in Seventh Plan

Over ten thousand additional quarters are expected to be completed during the Seventh Plan period for allotment to the Central Government employees working in different major cities in the country. A sum of Rs 130 crore has been allocated for construction of residential accommodation during the current Plan period against an allocation of Rs. 112.70 crores in the 6th Plan.

Five thousand quarters of different categories now under construction in Delhi and New Delhi are likely to be completed by the end of next year.

At present about 77,000 staff quarters of different categories are available with the Directorate of Estates under the Ministry of Urban Development which have been allotted to eligible officers and employees of the Central Government Besides, the Railways and other Departments like Posts and Telegraph, Telecommunication, Defence, Income Tax and Central Customs and Excise also construct residential accommodation for their staff in various cities.

The Ministry of Urban Development has also undertaken construction of general pool accommodation in five more cities at Agartala, Hyderabad, Kohima, Lucknow and Shillong in order to extend the facility to the employees of the Central Government offices located there. Presently this facility is available in eleven cities, namely, Delhi, Bombay, Calcutta Madras, Bangalore, Indore, Nagpur, Simla, Chandigarh, Faridabad and Ghaziabad.

Besides providing residential accommodation to the Government employees, the Ministry makes available office accommodation in Delhi and other major cities and is now engaged in the task of building modern office complexes within the available resources at important places where the Central Government offices are functioning. A sum of Rs. 35 crore has been allocated in the Seventh Plan for this purpose. □

Planning Commission finalises draft Seventh Plan

NDC to approve in November

Yojana Correspondent

THE PLANNING COMMISSION under the chairmanship of Prime Minister Shri Rajiv Gandhi at its full meeting held on September, 17, 1985 approved the draft Seventh Five Year Plan (1985-90) document.

The present draft is an improvement over the draft of July 31, 1985. I this respect the plan lays greater stress on human resources development in the areas of social welfare, education and youth services including sports, health and family welfare. Special attention has been given to socio-economic programme for women. The allocation in human resources development is Rs. 1,500 crore.

Highly employment oriented

The plan is projected to be highly employment oriented. The plan is targeted to create 40 million employment against the expected generation of 39 million additional labour force during the plan period. Besides, the agricultural strategy of the plan envisages maximum employment generation with an emphasis on increasing production of rice and dry land farming in the eastern region with a view to attaining regional balance. Adequate provision has been made under agriculture, rural devlopment and irrigation.

Besides, the number of people below the poverty line is expected to be reduced to 26 per cent at the end of the Seventh Plan from 37 per cent in 1984-85. While the calorie content of poverty remains the same the criterion of income per household has been raised from the existing Rs. 4,800 to Rs. 6,400.

Employment will also generate from re-orientation of agricultural growth processes, social services, primary education and through other well streamlined anti-poverty programmes like National Rural Employment Programme (NREP), Integrated Rural Development Programme (IRDP) and Rural Landless Employment Guarantee Programme (RLEGP) which are highly employment oriented.

Infrastructure

The plan gives considerable importance to the critical role of infrastructure for the growth of agriculture and industry. It has, therefore, given due emphasis on the increased outlays of infrastructural sectors such as power, coal, petroleum, railways etc.

The plan envisages a public sector outlay of Rs. 1,80,000 crore with an overall 5 per cent growth rate. It seeks to consolidate the gains of the Sixth Plan and concentrate on on-going projects. The plan aims at integrating the various benefit oriented programme in different sectors.

Over the five years, the plan assumes an aggregate investment at 1984-85 prices to be Rs. 3,20,000 crore, of which public investment will be about Rs. 1,54,000 crore. The projects will come up in the private sector during the plan.

The overall projected growth of 5 per cent during the plan period includes 4 per cent rate of growth for agriculture and 8 per cent for industry.

Resources gap bridged

The resources gap envisaged in the Approach Paper to the Seventh Plan in July, 1984 has been bridged and the plan is projected to be financially sound and eminently bankable as a result of various exercises carried out by the Planning Commission, regarding mobilisation of resources internally. In this connection, the public sector outlay of Rs. 1,80,000 crore assumed that there will be larger contributions

to the economy by the public sector enterprises. In addition, tax ratios are expected to be raised substantially. The Centre and States would undertake larger resource mobilisation than in the previous plan.

The plan envisaged an increase in the gross domestic savings to 24.5 per cent from 23.3 per cent at present. This will be about 2.6 per cent of the Gross Domestic Product as was envisaged in the Approach Paper.

Debt services

The debt services ratio will be under 20 per cent of the exports. The exports performances will be so managed that debt services ratio does not exceed 20 per cent of the over all exports.

The growth rate of exports is envisaged to be 6.8 per cent and of imports 5.8 per cent.

Upgrading technology

The plan lays special emphasis on modernisation and upgradation of technology in all sectors of the country. It also takes into account technological options in the horizon as well as costs and benefits.

The plan document has been prepared in line with the direction of the National Development Council as contained in the Approach Paper. Accordingly, food, work and productivity have been given priority and importance. The food security and self-sufficiency in food grains are the two main stays of the Seventh Plan.

The plan document envisages a perspective of 15 years upto the year AD 2000.

The sectoral allocation of the plan will be known after the draft Seventh Plan is approved finally by the National Development Council meeting on November 8 and 9, 1985.□

Environmental protection in Seventh Plan

The strategy for environmental protection in the Seventh Plan seeks to achieve the targets of afforestation, social forestry, preservation of wild life and control and prevention of pollution in water, air and soil. Besides, people's cooperation will also be sought in this regard. The rôle of non-governmental and voluntary agencies in all environmental action plan is of pivotal importance. Their participation with a view to arousing public awareness of the need for environmental protection will be needed.

The target of afforestation has been fixed at 5 million hectares per year in the Seventh Plan. Control of pollution of water and deforestation has been given top priority. The strategy also covers the target of depolluting Ganga water.

The Ganga is the longest river through 2025 kilometre length. It has ancient cultural links with the people of India. Above 100 cities are located on i[ts] banks. 27 of them are class one cities. 75 per cent o[f] the total population into the water comes from the[se] cities. 88 per cent of it is contributed by the class on[e] cities. That is why the first phase of the action pla[n] is to concentrate on only these class one cities to sto[p] effluents flowing into Ganga. It is hoped that the action plan on its completion will open up possibiliti[es] for cleaning other river systems of the country.

The cleaning of the Ganga at Haridwar, Rishike[sh] has already started and would be completed befor[e] January, 1986. Immediate planned action include[s] diversion of city sewers to sewer farms away from th[e] river.

Besides domestic and municipal pollution, discharg[e] of industrial effluents would be regulated. Siltation due to degradation of the river catchment areas woul[d] also be given attention. It would be necessary t[o] mount awareness programmes on the action plan t[o] enthuse the public particularly in regard to social an[d] religious customs contributing to pollution.

In regard to plan for reclaiming wasteland, the action would be on a wide range of front, social, govern mental, educational etc. for reclaiming 25 millio[n] hectares of land every year. Major policy initiative[s] would be required—nurseries on decentralised basi[s] with local species preference, social fencing for pro tection, loans on soft-terms, encouraging coope rative movements on forestry and community parti cipation.

Wood based industries would be encouraged t[o] grow their own raw materials for which denuded o[r] degraded lands would be made available, on leas[e] basis. Other measures relate to employing people, o[n] large scale development of waste lands thereby mini mising the dependence of people on the cutting o[f] trees. Plantation of trees for fuel purposes would als[o] be done close to the cities and urban areas. Pastur[e] lands would also be developed so that the fodde[r] needs of the cattle are cared for and the pressure o[f] grazing on forest lands could be reduced.□

Second unit of Madras atomic power becomes critical

The second unit of Madras Atomic Power Statio[n] has been synchronised to the grid. It is carryin[g] an initial load of 50 MW. It will be brought to it[s] full power of 235 MW in stages.

Like the first one, this unit has also been designed constructed and commissioned indigenously. Com mercial operation of the unit is likely to commenc[e] by the end of this year.

It may be recalled that Indian nuclear power pro gramme reached a new milestone with the commis sioning of the first unit of Madras Atomic Powe[r] Station in 1983. Declared commercial in Januar[y] 1984, it was the first Atomic Power Station whic[h] was designed, engineered, built and commissioned en tirely as a national effort.

BOOKS

Resource allocation and development

Resources, Values and Development by Amartya Sen, Oxford University Press, New Delhi. First Indian Impression 1985. Pages 547. Price Rs. 130.00.

Amartya Sen's innovative contributions have had a profound influence on development economics. Serving as Drummond Professor of Political Economy at the University of Oxford, he has created an impact of his versatile genius in the realm of economic development. In twenty essays of this book, the author deals with the traditional problems of resource allocation while particularly focusing on some uncomfortable subjects of inequality, deprivation, sex bias, under nourishment morbidity, hunger and famines. The descriptive and predictive analyses go specifically into institutional features at different levels, involving the state, the legal system, the wage system, the market mechanism, the family, and even the media and pressure groups.

While some essays have received mathematical treatment, others are descriptive though theoretical in nature. There are long lists of references for further reading. Discussing the theme of utilitarianism, the author quotes William James who in his Principles of Psychology remarked : "The art of being wise is the art of knowing what to overlook." To Amartya Sen, assessing what is overlooked does indeed seem to be quite a good way of judging what is being asserted. For example, the various approaches to moral judgements can plausibly be examined in terms of what the approaches respectively leave out. The dog that does not bark provides the clue.

The author observes that traditional development economics has been less successful in characterising economic development which involves expansion of people's capabilities. For this, economic growth is only a means and often not a very efficient means either. He asserts that famines and starvation can be more sensibly analysed in terms of entitlement failures than in terms of the usual approach focusing on food output per unit of population. A famine can easily occur even in the good food supply situation, through the collapse of entitlements of particular classes or occupation groups. In this context, the author remarks that while India has a better record than China in avoiding famines, the former's total failure to deal with endemic malnutrition and morbidity in the way China has been able to do is obvious. Whether the disparate advantages of the contrasting systems can be effectively combined is a challenging issue of political economy that requires attention.

The author sees development as expansion of capabilities of people. This perspective differs from taking a commodity centred view, of which concentration on GNP and its growth rate is a especially simple case. It also involves the rejection of a utility-based view, common in welfare economics. Further, it differs from the 'basic needs' approach, though it facilitates seeing that approach in a wider perspective. It is important to go into these foundational issues for understanding and analysing the requirements of development, including the nature of the structural changes that are called for. The process of development, according to the author, is not primarily one of expanding the supply of goods and services but of enhancing the capabilities of people.

The author goes on to investigate some important issues in welfare economics and their relevance to development policy and international ethics. He analyses the use of conventions and norms in the perception of deprivation and poverty, and in social behaviour involving divisions within the family and sex bias in general.

It is a treat to read the author's views which have high idea-density.

Navin Chandra Joshi

Policy organisation

The Policy Organisation by Arnold J. Mettsmer and Christopher Bellavita, Sage Publication, New Delhi, 1983.

In societies around the world the increase in the level of education and the process of democratisation has made people more aware of the societal issues and has made them more demanding. This has invariably led to greater intervention of the Government in the socio-economic sphere and has resulted into the expansion of the government. At the same time with the bigness we are faced with greater inefficiencies, delays, bureaucratisation and consequent problems of implementation. Therefore, one of the major questions that most policy makers and policy advisers face is: how to make the Government more responsive and more productive?

Considering that in the U.S. there has been a marked disenchantment of the people with the public programmes, which led to the tax revolt in California, the implementation of public programmes has become a touchy issue. The design and implementation of public policy, therefore, offers new challenges. As a consequence, during the last two decades, we find an enormous amount of literature, books, articles and case studies being produced in this field.

The book "Policy Organisation" belongs to the Managing Information Series edited by Aaron Wildavasky and is intended for the policy makers, analysts.

teachers, and students. It presents a case study detailing, how an educational policy—pupil proficiency assessment—was implemented in the California State, Department of Education. The authors attempt a structural mapping of the communication process to highlight the key elements of an effective policy organisation. The stated intention is to focus on communication in policy making the process of translating an idea into policy and identifying the key ingredients.

A major portion of the book is a descriptive presentation of concepts, ideas and explanations. The case material is integrated with theory to highlight the basic concepts of effective organisational design and public administration. The book illustrates the process and makes an interesting reading. But for the policy makers and senior bureaucrats who have a major stake in structuring policy organisation, it is too text-bookish to sustain the kind of interest that the subject deserves. □

Ravi K. Zutshi

Maritime in India

A Maritime History of India by Rear Admiral K. Sridharan published by the Director, Publications Division, Ministry of Information & Broadcasting, Government of India, Patiala House, New Delhi, pages 463, price Rs. 60.

Study of our maritime history has been neglected in the past, resulting in insufficient awareness of maritime affairs in our country. This book starts with prehistoric age (upto 3000 B.C.) and leads to the present day situations. The author has rightly pointed out that India was a nation of seafarers due to its strategic geographical position with expenses of sea around it.

We are proud of Indian Navy's glorious fight at sea in 1971. This contributed greatly to India's victory over Pakistan and is a memorable event in the maritime history of India. But how many of us know the gradual growth of the Royal Indian Navy through decades. It developed into the Indian Navy of today after independence of our country? The author in this book could draw successfully a picture of gradual growth and achievements of our Indian Navy and its role.

The author has also highlighted the importance of continuous survey of sea and river approaches to harbours and contiguous sea areas and he also points out insufficiency in the Surveying Service, of ships, trained staff and equipment. He has rightly laid emphasis on the improvement of surveying system as a whole.

The author has not exaggerated the importance of indigenous manufacture of ships which helps growth of ancillary industries apart from major industries.

It has been rightly pointed out that shipping is a primary factor in the economy of a nation which was also realised even during the Hindu period. For the development of Shipping, training of personnel is a must and Marine Engineering College was started at Calcutta in 1948 for the purpose. Efforts are being made to improve shipping in India.

The book is intended for those who are interested in the maritime history of India. The usefulness of this book is increased by incorporation of some important data relating to Indian maritime. □

Debabrata Das

Plant protection, the ecological way

All participating States and Union Territories at the recently concluded two-day All India Plant Protection Conference held in New Delhi have accepted the need to adopt Integrated Pest Management Approach for plant protection to avoid side effects of chemical pesticides and to protect the ecological balance.

They stressed the need to develop and use natural bio-control agents and very judicious application of chemical pesticides. The States were advised to popularise pest and disease resistance varieties and emphasise plant protection in dryland farming areas. For proper plant protection, the strengthening of infrastructure like need based and crop based use of plant protection measures was also recommended.

The Conference was attended by administrators and scientists from the Central and State Governments and Union Territories, Ministry of Chemical and Fertiliser, Planning Commission, Indian Council of Agricultural Research, agricultural universities, Directorate-General of Technical Development and the pesticides industry.

The Conference was informed that the Government has decided to introduce a bill in Parliament to plug loopholes in existing Insecticides Act, 1968.

The States were advised to have contingency plans to counter the outbreak of diseases.

It was estimated that the States and Union Territories demand for technical grade pesticides for 1985-86 would be approximately 56,000 tonnes which could be met by the pesticides industry. The Conference urged the pesticides industry to introduce voluntary price control, in house quality control system and training of dealers for educating the farming community in proper and safe use of pesticides.

The Conference strongly felt the need for better co-ordination of scientific data generated by the agricultural universities and ICAR Institutes to enable statutory agencies to realign their policies and approaches. The agricultural scientists enlightened the Conference on various emerging pest problems, varietal changes, hazards of chemical method of pest controls and also the risks associated with the third generation pesticides. □

Action plan for safety in chemical industry

TO CONTROL HAZARDS' in chemical, fertilizers and pharmaceuticals units, the Union Ministry of Chemicals has taken up an action plan. In respect of new cases for industrial units specific stipulations will be made to ensure that adequate steps are taken for the purpose of safety in plants having hazardous processes. Before such plants go into operation, it will be verified to ensure adequacy of steps taken in this regard.

It is felt that hazards may have to be classified in terms of potential dangers which could cause serious injury to workers and damage beyond the vicinity of work place and general environment. The hazardous units could be classified as toxic, highly reactive, inflammable and explosive.

The inter-department group set up to advise implementation of the safety action plan recommended that in respect of existing units in the private sector, special expert groups are being constituted for undertaking special studies for ensuring safety of units having highly hazardous processes. It is proposed to complete soon this work in respect of 24 units.

Special care is already being taken for safety in public sector units under the administrative control of this Ministry. Two expert groups would make an end to end safety review of all these public sector units soon. One group will go into the fertilizer units and the other for chemical and pharmaceutical units.

The experts will carry out surveys in which the specialists from concerned disciplines including process and engineering experts, scientists and safety experts will also be associated.

Though Ministry of Chemicals will keep an overall watch on safety measures, the primary responsibility for ensuring implementation will rest with the appropriate State Governments, like the Factory Act with Ministry of Labour and Small Scale Industrial Units with Directorate of Small Scale Industries. The Ministry will also provide necessary assistance to monitor safety measures.□

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More allocation for leprosy eradication in Seventh Plan

THE AMBIT OF THE National Leprosy Eradication Programme is being enlarged to cover 76 hyper endemic districts in the Seventh Plan where the prevalence rate of leprosy is more than 10 per 1000 population. There are 201 endemic districts in India with a prevalence rate of more than 5 per 1000 population which have to be brought under multi-drug regimen. The total allocation for the National Leprosy Eradication Programme during the Seventh Plan is expected to be about Rs. 65 crore. The budget estimate for 1985-86 is Rs. 14 crore.

Fourteen more districts are being taken up for multi-drug treatment under the National Leprosy Eradication Programme during 1985-86. So far 15 districts in different States with a population of about 37 million have been covered and over three lakh leprosy cases are under multi-drug treatment.

The new districts taken up are Chittoor (Andhra Pradesh), Alleppey (Kerala), Chandrapur (Maharashtra), Cuttack and Sambalpur (Orissa), Rajnandgaon, Ding, Bilaspur and Raipur (Madhya Pradesh), South Arcot and Salem (Tamil Nadu), Barabanki (Uttar Pradesh), Dangs (Gujarat) and Lakshadweep.

The multi-drug treatment comprising Dapsone, Rifampicin and Clofazamine prevents development of drug resistant germs. This treatment is more effective than monotherapy treatment by Dapsone alone.

Over 3.2 million leprosy patients have been brought under treatment upto April 1985. The annual detection of new cases is to the order of four lakhs. About four lakh cases are annually discharged as disease arrested or cured. About 1.95 million cases have been discharged to have been cured since inception. There are about 403 leprosy control units, 6985 Survey Education and Treatment Centres, 661 Urban Leprosy Centres, 190 District Leprosy Units, 43 Leprosy Training Centres and 253 Temporary Hospitalisation Wards functioning under the National Leprosy Eradication Programme in 31 States/UTs. About 40,000 indoor beds are available for leprosy patients in leprosy homes/hospitals and wards.

National Leprosy Control Programme was launched in 1954-55. The programme was redesignated as National Leprosy Eradication Programme in 1982 on the recommendations of the Working Group under the Chairmanship of Dr. M.S. Swaminathan. District-wise multi-drug campaign supported by health education for creation of awareness about the true nature of disease and its curability is the main methodology to achieve the objective.

The 15 districts that had been already taken up under Multi-Drug Treatment of leprosy cases are : Srikakulam, Vizianagaram, Visakhapatnam (Andhra Pradesh), Deoghar (Bihar), Baroda (Gujarat), Belgaum, Dharwad (Karnataka), Wardha, Amravati (Maharashtra), Ganjam, Puri (Orissa), North Arcot, Chengleput (Tamil Nadu), Varanasi (Uttar Pradesh), Purulia (West Bengal).□

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Planning—history and its lessons

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Family welfare, a voluntary affair

NEXT ISSUE

Focus on industrial relations

ICDS curbs infant mortality

THE INTEGRATED CHILD Development Services, (ICDS) has helped reduce child mortality and improve the health and nutrition level of children in the 0—6 age group. About two-thirds of the 58 lakh children receiving supplementary nutrition belong to scheduled castes and scheduled tribes and other deprived sections of the society.

As against the national infant mortality rate of 110 per thousand in 1981 the infant mortality rate of ICDS project areas was 88.2 per thousand in the same year. Similarly, the birth rate in ICDS project areas was only 24.2 as against the national birth rate of 33.3 in 1981. Besides, the programme itself provides part-time employment to about 2.20 lakh women who work as honorary workers. Most of them belong to low income groups.

The Integrated Child Development Services (ICDS) Programme has to be expanded considerably if the benefits of the scheme are to reach the vast number of the deprived children in the country.

The ICDS has completed a decade of useful work. The gains from the programme have been in the desired direction. There is much that still needs to be done.

The ICDS programme was launched ten years ago on October 2, 1975. From a meagre 33 projects, it expanded to 1354 projects by the end of June 1985. Under the 1354 ICDS projects, 119503 Anganwadi centres are functioning in remote corners of the country. By the end of June 1985, 1,07,232 Anganwadi workers had been appointed and most of them have already been trained. In these Anganwadi centres, by the end of June 1985, 58,21,870 children received supplementary nutrition, 12,25,660 mothers received supplementary nutrition and 32,31,390 children got pre-school education. ❑

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The nine lessons we need learn !

Malcolm S. Adiseshiah

Surveying 35 years of planning the noted economist says we have now to ponder whether a smaller plan with clearly formulated objectives and feasible targets is preferable to a plan whose resources keep doubling in each plan period, while the realisation keeps declining. The gap between the targets and their actualisation has not bridged. In the Sixth plan except for foodgrains, crude oils and population, in all other sectors and sub-sectors the achievements were below the target. There is need for the administration of the plan to be taken into account in the very processes of planning. The question whether this is administratively feasible is posed at every stage of the planning process.

A FIRST LESSON that we have learnt from our planning history is to turn the economic section manifesto of the party winning the elections into the aims and objectives of the Five Year Plan This has varied from the First Five Year Plan's rather broad statement of objective in the following words · "The Central objective of planning in India at the present stage is to initiate a process of development which will raise living standards and open out to the people new opportunities for a richer and more varied life. The problem of development is one of utilising more effectively the potential resources available to the community and it is this which involves economic planning" (First Plan document). In the second plan the objectives were spelled out as an increase in the national income, rapid industrialisation with emphasis on heavy industries, increase of employment and reduction o funemployment. The third plan carried the statement of objectives further in aiming at (i) a 5 per cent annual growth, (ii) self sufficiency in foodgrains, (iii) expansion of basic industries to meet requirements of further industrialisation within 10 years, (iv) increasing employment and (v) reducing disparities in income and wealth. The Fourth Plan referred to stability and self-reliance, calling for intensive irrigated agriculture and basic modern industry, reducing concentration of economic power and ensuring that the benefits of growth are evenly distributed as the major objectives. The Fifth Plan stated that its objectives are removal of poverty and achievement of self reliance, calling for special attention to agriculture, and critical intermediaries and educational employment opportunities. In the Sixth Plan, 10 objectives ranging from accelerated growth to people's participation in planning were set forth, and a similar spelling out of the objectives from increased agricultural production, employment generation to improved productivity are set forth as major thrust areas of the Seventh Plan.

Evaluations

Parallely, a second lesson that we have learnt is to assess the performance of the economy before the start of the Five Year Plans, which provides a useful feed into the next plan, showing the areas to be emphasised and those to be changed or given lower priority. In addition, planning also provides the opportunity for a mid-term assessment of the ongoing plan, mainly with a view to making the necessary mid term corrections in targets, investments, etc.

Thus, the Sixth Plan begins by the evaluation of the past bringing out: (a) the need to set targets more realistically or make the necessary public sec-

for investment, improve capital output ratios, increase inputs supply and capacity use, forecast savings and deploy managerial skill to achieve the targets, (as against the reported comment of the Finance Minister during a meeting of the Planning Commission when the proposed rate of growth was being debated, saying "Let us have the high 5 per cent rate. After all this is only the plan"); (b) the generally sound record on modernisation in secondary industry, increasing its share of National Income from 18.8 per cent to 29.9 per cent in two and a half decades, the public sector's value added increasing from 8.1 per cent to 28.9 per cent in two and a half decades, the new agricultural technology leading to growth rates in area, production and crop yields and the rapid development of human resources, along with need to correct the narrowness of the capital market and the mismatch between the forms and functions of the institutions; (c) the nature of disequilibria in the external sector, in imports exports foreign resources inflow, deteriorating net terms of trade, the accelerating debt service ratio, calling for an appraisal of the implementation of policy of self reliance, so that it may be more effective and (d) the poor record in promoting social justice seen in the 46 per cent increase in overall per capita private consumption compared to the 14 per cent increase in per capita consumption in rural and 3 per cent in urban areas of the poorest group over two and a half decades, and the maintenance of 51 per cent in rural and 38 per cent in urban areas of people living below the poverty line. The Mid Term appraisal in its turn, led to the lowering of the steel, coal, irrigation, foodgrains, non ferrous metals and some 16 other targets and a decision to increase public sector investment in the core sector.

Macro and micro planning

A third lesson from three and a half decades of planning experience is the increasing sophistication of models that we have developed and used in computing the relationship between various sectors and sub-sectors, starting with a 24x24 model, moving on to a 60 x 60 and later to a 80 x 80, and with modern fast moving computers to as many of the several thousand industries and occupations of the economy as needed, as a means of achieving balanced growth, of pushing desired sectors and industries to grow faster than others, and of forecasting the effects of changing consumptoin requirements. Both chapter II of the Plan which deals with the 10—15 years perspective and Chapter III which sets forth the next 5 years, derive their production targets for each sector and sub sector from these models. These models need to be further refined to take into account not only innovations or inventions or discoveries as in the case of Bombay High crude or the new agricultural technology which can make the sectors concerned grow faster than forecast in the model, they must also take account of the various constraints including declining productivity seen in the rising capital output ratio to forecast a feasible output rate.

In the Sixth Plan except for foodgrains, crude oil and population, in all other sectors and sub sectors, the achievements were below the targets established. One reason for this, it is agreed, is because planning is centralised and not being undertaken at the local grassroots level. Models are therefore being developer for regional, state and district level development planning as well as planning models for the public and private sectors. At the regional and state levels, two sub sets, of efficiency and the public sector, along with the inter-state flow of goods are now available, and at the district and local levels the model concentrates on the District Domestic product and on three major issues, poverty, unemployment and inequality, where the data is integrated through 'Geocoding' At below the state level, these models are, however, just being explored. It is planning that has brought home the absolute need for planning at the district block level, and is making possible these micro level explorations.

Targeting and deceleration

A fourth lesson derived from planning is the targeting of the National Income which has been at an annual rate of 5 per cent during the three and a half decades and the per capita NNP at 2 per cent. The realisation, however, has been 3.5 per cent per annum as the trend rate of NNP and 1.56 per cent per capita per annum in the '60s and 1.22 per cent per annum in the '70s. Thus not only have these basic targets been seriously under-achieved, there has been a deceleration in the seventies compared to the sixties. In foodgrains, the per capita growth of 1.58 per cent per capita in the sixties fell to 0.17 per cent in the seventies (With the present bulging foodgrains stocks exceeding 30 million tonnes, the eighties should see an appreciable increase in per capita foodgrains consumption, a decrease in under nourishment and mal-nutrition, before the proposals for India to become an exporter of foodgrains is given effect to). Similarly power production which rose per capita by 8 per cent per annum in the sixties fell to 4.4 per cent per capita per annum in the seventies. In manufacturing, the value added rose by 5.16 per cent in the sixties and fell to 2.12 in the seventies. In the area of adult education, the percentage of literacy increased from 23.2 per cent in 1961 to 29.48 per cent in 1971 and 3623 per cent in 1981, but the number of illiterates increased from 337 millions in 1961 to 387 millions in 1971 on to 442 millions in 1981. This also reflects the change in the structure of the Plan from the single objective of economic growth to multiple objectives of redistribution, employment, growth, minimum needs, human resources development and economical balance.

Infrastructure development

A fifth lesson learnt from planning is that the government has to assume responsibility for the development of the infrastructure because of the heavy and high investment it calls for and the long gestation period involved. The development of roads, railways, power, crude and petroleum products, shipping, iron and steel, non-ferrous metals and coal falls in this area. This together with the heavy industries sector ought to account for what is called the public sector outlay. In fact if it had not been for the Six five year plans and the deliberate decision that economic self-reliance involves the country becoming largely self sufficient in the heavy industries area, the country would be following the path of some other developing economies, (which are pointed out as examples that India should follow), which concentrate on producing (low capital) consumer goods and their industries and acting as an assembly point for consumer durables and intermediates produced outside by multinationals, which are imported as sub assemblies; and using 'screw driver technology' are assembled in the country, along with importing the capital goods, equipment and machinery needed.

From being a country which had only one steel plant and no heavy industry before planning began, the decision to develop the heavy industry, capital goods sector has made the economy both self-reliant and has increased the backward and forward linkages between agricultural and manufacturing industry and between the various manufacturing sectors and sub sectors.

The poverty fiasco

A sixth lesson from Planning concerns the poor in the country, their percentage of the total population, their absolute numbers, their condition, their relief and alleviation, with proposals for their standards being raised to normal human levels. Inspite of the concern about poverty dating back to the times of Dadabhai Naoroji; despite that being reflected from the First Five Year Plan among the objectives; inspite of the perspective planning division bringing together a group of economists and public men in 1962 and defining poverty as involving not consuming 2,400 calories per person per day in rural and 2,100 calories in urban areas, which called for a per capita monthly expenditure of Rs. 20.00 in rural and Rs. 25.00 in urban areas at 1960 prices; the number of the poor on the above definition has been well above 300 millions in all the three and a half decades of planning. (That has also been the number of adult illiterates and that number drop out of our elementary schools.) The reason for this continuing hard core of the poverty ridden mass of our people is because the six plans have not been addressed to removing poverty. In the fifties and sixties, the accent in the Plans, despite words to the contrary, was on growth.

It was from the early seventies that the serious nature of the poverty problem was recognised and in addition to overall development programmes in agriculture and manufactures (which under the trickle down theory were gradually meant to seep down to the urban and rural poor), from the Fifth Plan beneficiary-oriented programmes were developed by increasing the reservation of certain consumer goods for the employment generating small sector, expanding KVIC, pushing forward on land reform, and developing NREP, IRDP, RLEGP, TRYSEM and other programmes. Planning now has a major cathartic function in keeping the problems of poverty prominently before the eyes of the public and their political representatives.

Declining implementation

A seventh lesson from our long history of Planning is the growing and seeming unbridgeable gap between planning and implementation. Earlier reference was made to the targets overall, sectoral, national and for states that were set as a result of putting the political decisions on policies, priorities and programmes through the models, on the one hand and the much lower realisation of the plans in their actualisation on the other From the second Five Year Plan there has been a separate chapter on implementation and administration of the Plan, but this has not really closed the gap between the targets and their actualisation. The reasons for this gap are manifold. As will be seen later, the plan applies strictly only to the economic sector owned and operated by the government—the union and state governments—which account only for 20 per cent of the total economy. For the rest of the 80 per cent, the Plan can only use indirect techniques such as price support, tax incentives, foreign exchange allocations, priority in imported goods, etc, which are not only ineffectively administered but which contribute to the "black sector" of the economy, and to various forms of corruption and leakages.

Even within the governmental economic sector, the multiple objectives are not fully taken into account along with their trade off, so that the realisation in this sector is also some distance away from the target. We have not really faced the issue of whether a smaller plan with clearly formulated objectives and feasible targets is not preferable to a plan whose resources keep doubling in each plan period, while the realisation keeps declining. There is need for the administration of the plan to be taken into account in the very processes of planning and the question whether this is administratively feasible posed at every stage of the planning process.

Population nullifies plan objectives

An eighth lesson that Planning has brought out is the over-riding effect of the explosive growth of population on the development of the country and the well being of the individual and his family. Here

again, despite the problems of population growth being highlighted in the Plan from the beginning, particularly from the Third Plan; despite the large and increasing Plan outlays allocated to population control programmes; the rate of population growth has remained well above 2 per cent per annum throughout the planning period, and will be making the country the most heavily populated country in the world in thirty five years from now.

The Sixth Five Year Plan hopefully estimated the population at the start of the plan at 672 million, but in the 1981 census that followed immediately after the publication of the plan, the population at that point of time was shown to be 685 million. In the Seventh Plan again, many programmes are being based on the population growth rate declining to 1.5 per cent.

The one thing that we learn from planning is that we never learn from planning. As for the effect of population growth on development, my studies show that through the plan programmes about 5 million people living in poverty are lifted from poverty per annum, but because of our population growth about that number also joins the poverty ranks, which explains the absolute number of the poor remaining unchanged

Futile controls and the 'black economy'

A final group of lessons from planning centre around the elaborate system of controls—licenses, letters of intent, industrial licences, import conrol, REP licenses, credit controls—the position of the private sector, and the 'black economy' that we have developed that defeat the purposes of the Plans. The maze of controls that have been developed over the three and a half decades of planning makes agricultural and industrial production halting and difficult, breeds corruption at every stage of the control system, and leads to diversion of the production flows to channels not intended in the Plan. And now equally hastily, the controls are being removed in a wholesale manner, not providing for these essential controls on that part of investment that will ensure the production of essential goods for the poor majority.

The private sector has held an ambiguous position in the Plan. On the one hand, the Plan, except for setting forth the global outlay covering the public and private sectors, and indicating certain outputs targets derived from the input-output tables referred to earlier, does not deal with the private sector, which (together with agriculture) is responsible as earlier pointed out, for 80 per cent of the economy. However, under the industrial policy resolution and its schedules A, B & C, the Industries (Development and Regulation) Act 1951, as amended in 1975, 1979 and 1981, the MRTP Act and the FERA, COFEPOSA and other Acts, that manufacturers in the private sector are subject to, a series of controls as earlier noted, have been imposed which have been self-defeating in terms of productivity, industrial development, growth and equitable sharing of the benefits of industrial development.

The Plan has yet to come to terms with the private sector, and for this the technique of indicative planning needs to be developed and tried. And then there is the 'Black sector' which operates illegally outside the plan, and which involves the equivalence of 40 per cent of the national income of the country. The 'Black sector' can be controlled to a more normal 10—15 per cent of the national economy, if (i) there is public opinion against that form of living, (ii) the political processes are divorced from it, (iii) the tax legislation is streamlined, tightened and well administered, (iv) the offenders are speedily and severely punished with no possibility of resorting to delaying court action, and (v) the one time periodical remedy, like a periodical purge, in the form of demonetization is adopted. □

Procurement prices for paddy

THE CENTRAL GOVERNMENT has fixed the procurement prices for paddy and the minimum support prices for kharif coarse cereals and pulses for the 1985-86 marketing season.

The procurement price for common variety of paddy of fair average quality has been raised from Rs. 137.00 per quintal during the 1984-85 marketing season to Rs 142.00 per quintal for the 1985-86 marketing season.

For fine variety of paddy the price will be Rs. 146.00 per quintal and for superfine variety of paddy Rs. 150.00 per quintal during the 1985-86 marketing season.

This will benefit the farmers, particularly the small farmer who grows common variety. As a consequence of this the issue price of the rice will also be revised and it is expected to cost less than 10 paise more per kilogram A special scheme for supply of foodgrains to economically weaker sections is under formulation and will be announced before the end of this calendar year

The minimum support price for jowar, bajra, maize and ragi of fair average quality has been fixed at Rs. 130.00 per quintal.

The minimum support price for tur (arhar), moong and urad of fair average quality has been fixed at Rs. 300.00 per quintal. The prices of these for 1985-86 season have been raised by Rs. 25.00 per quintal over that of last year. □

Nehru-Mahalanobis model is still valid

Mohit Sen

In a critical analysis of the process of planning in India, Mohit Sen feels that Mahalanobis plan frame of 1955 embodied the complete vision of Nehru. Primacy to public sector, development of heavy industries and elimination of unemployment after 10 years were some of its salient features. He feels, not the lack of political will, but a particular type of political will is responsible for insufficient transformation of the country. Nehru-Mahalanobis model was never given a chance. It failed for want of necessary unity and coalition of socio-political forces, maintains Sen.

AS MATTERS ARE in certain influential quarters, one wonders whether pretty soon all that we shall be left with in the sphere of planning would be its history! And, while history teaches and history continues into the present, yet history is, after all, about what is over.

For example, the draft Seventh Five Year Plan after its consideration by the National Development Council has just passed into history ! There is such lack of interest in it among the general public And it is treated with scarcely concealed contempt by many in the socio-economic power structure. Plans may come and plans may go but we shall prosper forever, seems to be attitude of the vested interests in our country.

This was not so before. The First Plan, whatever may be its essential worth, certainly caused controversy, conflict, enthusiasm and even excitement. India appeared to be setting out on the high road of new and significant adventure, the adventure of conscious making of itself. No longer were we making just a tryst with destiny but making our own destiny. To an extent, this was because planning was one of the pledges that our freedom struggle took from the early 1930s onwards.

Initiation

It is, indeed, a matter of pride for us that our freedom movement was one of the first in the world to grasp the significance and even indispensability of planning for independent development or development towards Arthik Swaraj and socialism understood. really, as Sarvodaya.

Even when doubt and scorn was being poured on the launching of the first Five Year Plan in the Soviet Union in 1929, it was Pandit Jawaharlal Nehru who wrote to his daughter India Priyadarshini about how the Soviets had put magic into the word 'Planning'. It was under his inspiration and with the enthusiastic cooperation of Netaji Subhas Chandra Bose, who was its President that as long back as 1938, at the Haripura Session, the Congress established the National Planning Committee.

Planning caught on, as it were, it became so prestigious thanks to Soviet success in the midst of the great capitalist crash and depression (1929-37), that almost everybody bacame a planner. The Gandhians produced their plan. So did the Tatas and Birlas. M. N. Roy came forward with his "People's Plan".

The only way for progress

There was not only wisdom but complusion behind the "craze for planning", as it may be termed. India was so vast, so backward and her masses so stirred up

that the method of praying to the "invisible hand", of making "private vice produce public virtue and of becoming rich by making other countries poor, just would not work; an integrated, comprehensive effort was necessary and also possible to build the foundations of the noble edifice of a free India which would be an abode of prosperity as well as justice. Planning was not one of the ways of advance for our people. It was the only way.

Yet another factor operated. And that was national self-confidence. In 1947, what happended has been described as a "transfer of power". In fact, it was the climax of an epic, even if in some respects flowed, mass struggle for freedom. The great personalities and qualities of Gandhiji, Panditji, Netaji, Bhagat Singh, Tilak and the rest of the galaxy, played a tremendous role in this epic. But the true heroes were the men, women and children of India who fought on, refused to yield in the face of setbacks and seductions and won.

Arthik Swaraj

Those who had defeated imperialism could, and would surely defeat their own poverty, backwardness, oppression and exploitation. But, as in the case of the freedom struggle, this required mobilisation and organisation. The form that this battle for Arthik Swaraj and justice could take could only be planning. It is not often realised, much less emphasised, that planning is another dimension of freedom the conscious building of the economic base of all social activity.

It has been correctly analysed by Francine Frankel in her fine book, India's Political Economy (1947-77) —The Gradual Revolution that planning in India was the result of a Gandhian-socialist consensus. One might add the word "compromise"—this would be applicable to both partners to the consensus This consensus-compromise was : rapid, modern economic growth; progressive removal of inequalities till class differences and; limit the acquisitive instinct and promote the cooperative; introduce institutions" changes to achieve that oppose concentration of economic power, including in the hands of the State There was also the emphasis on going along a third way of development, different both from the capitalist and the communist systems. The core of this third way was to combine economic advance with peaceful social change.

Launching of the first plan

This consensus was reflected in the First Plan. The Government's role in that plan, even in its less conservative finalised form, was limited to creation of social capital and provision of financial incentives for expansion of private enterprise. A warm welcome was extended to foreign capital. The highest priority was accorded to agriculture, rural development, irrigation and power. At the same time radical agrarian reforms were eschewed, though in its final form the plan did advocate imposition of land ceilings

Not at all a promising start. It might be said no start at all for planning. Yet it was a start and credit for this has to be given to Pandit Nehru. It was thanks to him that planning became an integral part of the very functioning of India. It was thanks to him that a powerful, purposeful and prestigious Planning Commission was established.

More than that he provided the rationale and insights about the planning with the help of prominently Prof. K. N. Raj. These are contained in two remarkable paragraphs in the introduction to the First Plan. "Whether one thinks of the problems of capital formation or of the introduction of new techniques or the extension of social services or the overall realignment of productive forces and class relationships within society, one comes inevitably to the conclusion that a rapid expansion of the economic and social responsibilities of the State will alone be capable of satisfying the legitimate expectations of the people. This need not involve complete nationalisation of the means of production or elimination of private agencies in agriculture or business or industry. It does mean, however, a progressive widening of the public sector and a reorientation of the private sector to the needs of a planned economy".

The same introduction makes it clear that the basic cause of India's backwardness is not the absence of modern technology per se but in the persistence of "certain inhibiting socio-economic factors which prevent the most dynamic forces in the economy from asserting themselves......For development to proceed further, a readaptation of social institutions and social relationships thus becomes necessary The problem, therefore, is not one of merely rechanneling economic activity within the existing framework; that framework itself has to be remodelled"

Second Plan gives a push

These insights found practical shape only with the work that went into preparing the Second Plan (1956). Looking back over three decades one can say that not only did serious planning begin only then but that it gave a power push and orientation to the planning process which lasted and which has, in fact, to be picked up again.

It was no accident that along with the Second Plan came the revised Industrial Policy Resolution (1956), the qualitative jump in comprehensive cooperation with the Soviet Union and the Awadi Resolution on the "socialistic pattern of society". It stated that "Planning should take place with a view to the establishment of a socialistic pattern of society where the principal means of production are under social ownership or control"

Mahalanobis plan frame

This approach was further concretised in the celebrated plan frame of P. C. Mahalanobis published in

March 1955. It is invidious to single out persons when it comes to deciding as to who was responsible for doing most to embody in actual planning practice the complex vision of Nehru. Yet it is also unfair, sometimes, not to name persons for praise when it is all too easily done for censure. It is Prof. Prasanta Chandra Mahalanobis who is pre-eminent in this regard. A remarkable man by any standard, it is a sign of the times that he is hardly known and never mentioned by those in the sanctum sanctorum of power.

The Mahalanobis plan frame had six basic elements : first increase the scope of the public sector and in this way advance to a "socialistic pattern of society"; second, develop heavy industries and strengthen the foundation of economic independence; third, increase production of consumer goods through labour-intensive village and small scale industries to increase employment among the poorer sections of society so that a greater proportion of the increase of income would go to them; fourth, eliminate unemployment after ten years; increase agricultural productivity; improve the quality of social services "especially for the poorer sections of society."

The programme envisaged the nationalisation of the Imperial Bank and life Insurance; the setting up of the State Trading Corporation; the increase of income taxes and introduction of wealth, expenditure and capital gains tax. Consumption was to be regulated to increase savings; price control was to be imposed; state trading in foodgrains and essential consumer goods was to be introduced

Nehru and land reforms

This was also the period when Pandit Nehru not only insisted on land reforms beyond zamindari abolition but insisted on cooperative joint farming, especially at the January 1959 Nagpur AICC Session

All this roused furious opposition, including from within the Congress itself-leading eventually to the setting up of the Swatantra Party.

Nehru retreated before this offensive, particularly by not fixing any time table for implementation. He retreated because he did not or could not mobilise and organise the necessary coalition of social-politi--cal forces that could beat back this offensive and provide the thrust for the implementation of the plan. Reliance on the bureaucracy and on ruling party alone, haterogeneous as it was, was to be its and his undoing.

When one says he did not mobilise and organise the needed social-political coalition, one thinks of the dismissal of the CPI-led ministry in Kerala in 1959. When one says he could not do this one thinks of the kind of trouble that the 1959 Tibetan imbroglio portended.

Nevertheless, the II Plan approach persisted into the Third Plan (1961-66). This was clear from the start with the celebrated June 1959 Ooty Seminar. This seminar, attended by Nehru, rejected the view that production stimulation should take precedence over income redistribution in planning process. It was stressed that the plans had to take the country "a significant step forward to its goal of a socialist society". It emphasised that the implementation of institutional change was the most effective method for mobilising agricultural savings and surpluses. In this connection pride of place was given to joint cooperative farming, state trading in foodgrains and labour cooperatives.

External pressures

This time the offensive against this approach came from the World Bank and AI Consortium powers with the US insisting that priority be given to agriculture and not heavy industry. And this was followed up with the April 1959 Ford Foundation Report entitled, India's food crisis and step us to meet it. This favoured the technocratic as against the institutional approach along with the strategy of intensive development in selected favoured areas.

Once again there was the all two familiar compromise in the finalisation of the Plan, the basic approach was retained and the intensive Area Development Programme was tacked on along with the endorsement of the Panchayati Raj scheme But no time-table was announced for the implementation of land reforms, organisation of cooperatives or the introduction of state trading in foodgrains

The Third Plan was never really given a chance The serious drought apart, there were the wars with China and Pakistan and, above all, the illness and death of Nehru Right till the end, however, the struggled to leave the legacy of a reasonably district orientation

Public sector's primacy

This was embodied in the Resolution on Democracy and Socialism passed at the January 1964 Bhubaneswar session of the Congress This resolution emphasised the multiple goals of planning . a satisfactory growth rate, strong industrial base; removal of poverty, establishment of a socialist society. It endorsed the Industrial Policy Resolution of 1956, called for a ceiling on individual income and private property, urged that land reforms be completed in two years as well as joint cultivation cooperatives be set up in the rural areas, proposed progressive state takeover of rice mills, suggested state trading in foodgrains, price controls and social control over banks It stated that "the public sector must grow progressively in large scale industry and trade, particularly in the field of heavy and basic industries, as well as trade in essential commodities".

Nehru's death did not lead to the demise of planning but certainly to its denigration and degeneration. Even in his hay day, it is true that he could not really convert our economy into a planned one. It re-

mained largely a market and even unregulated economy. The objectives set out in the plans, their physical targets and desired structural modifications were not realised. The socialist slogan so proudly emblazoned on its banner served as a mocking reminder that "the best laid plans of mice and men go awry".

Yet definite progress had been made. The vicious circle of stagnation had been broken and the forces of development set in motion, not of the classical capitalist type but of anti-imperialist national development with a capitalist orientation. Indian society as a whole was democratised in comparision with its colonial past though not even reaching the stage of transition to socialism. The public sector had come near reaching the commanding heights of the economy and Indo-Soviet economic cooperation had become a qualitatively new and significant factor

The years that followed were miserable and decimating years for planning in India Symbolic of this fact was that even the draft outline of the Fourth Plan was ready only in August 1966

Slackening of planning process

From May 1964 till then, there was a dramatic, rather tragic, abandonment of the elements of advance and progress in the planning process

The Planning Commission was eclipsed; a shift was made from controls to incentives vis-a-vis big business; there was a reorientation of investment from basic industries to agriculture; the new agricultural strategy was to concentrate modern inputs in irrigated areas; the role of private Indian and foreign investment in the industrial sector was enlarged. The result of all this was that while the wished for acceleration of growth did not take place. disparities did significantly increase.

Step by step the necessary machinery of and for the Planning Commission was dismantled. It was turned from the national policy-making body on economic issues to an expert advisory body. It was all the greater pity that the Planning Commission, reconstituted in September 1967 and headed by the respected Prof. D. R. Gadgil, appeared to acquiesce in and, perhaps, to agree with this truncated role for itself.

Plan holiday

There were three years of Annual Plans (1966-69) which in fact, meant three years of plan holiday and total reversion to the colonial pattern of just budgeting for the economy. Incidentally, it has struck me for a very long time that while the Parliament devotes its longest session to discussing the Five Year Plan and that too, if there is a quorum !

The new draft Fourth Plan (1969) fitted in with this scenario. It called for growth with stability, accepted inequities for the sake of growth, placed maximum reliance on initiatives of the public sector, directed its largest cuts at industry and minerals and proposed that what should be done is to allow "the market much fuller play".

The Fourth Plan was soon overtaken by the events in the political field which came to a head in 1969 and which set in motion the train of events leading to the Emergency of 1975 and the Janata victory in 1977. It came to an unknown and uncared for end in 1974.

Price stability and Fifth Plan

Before that a certain change or reversal of the Nehru-Mahalanobis approach was discernible in the Approach Paper to the Fifth Plan which saw the light in May 1972. It called for "development along socialist lines to secure rapid economic growth and expansion of employment, reduction of disparities in income, wealth, prevention of concentration of economic power and creation of the values and atitudes of a free and equal society". It called for a strategy directly anchored to the objective of removal of poverty. It envisaged the takeover of the wholesale trade in wheat and rice, a comprehensive scheme of state trading in foodgrains and other essential commodities. There was to be procurement and public distribution of standard cloth, sugar and edible oils. All this was to be the key to price stability.

Industrial production was to be oriented away from elitist items of consumption to mass items along with increase in the reach and range of social consumption, e.g. education, health, drinking water, housing, etc.

It wanted to raise the low yield of direct taxes, tax urban property and agricultural income It stressed the need for a proper ceiling on land holdings and the establishment of service cooperatives.

But the Fifth plan was fated never to be implemented. Its draft, completed under the direction of D. P. Dhar, was declared obsolete in 1975 by his successor, P. N. Haksar. Its final version (meant for the years 1974-79) was published in 1976. Though this was a water-down version in policy terms of the original draft, yet it too represented a return to the Nehru-Mahalanobis framework at a higher level of technical sophistication. In all this, the contribution of professor Sukhamoy Chakravarty stands out. But before anything could be done, there fell the shadow of 1977. As a matter of fact, even before that to get the plan through at all required herculean efforts because of the pressures that had been mounted on Prime Minister Indira Gandhi

Followed the "rolling plan" which was not even a figleaf to cover the practically total capitulation to the long ago advanced policy prescriptions of the World Bank. But this, too, was rolled away by 1980.

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Sixth Plan, a recovery

The Sixth plan was fortunate in being able to run its full course, fulfil its national income growth rate targets and some of its physical as well as expenditure targets. But it was not a particularly distinguished plan in terms of any fresh breakthrough or retreat, for that matter. It can, perhaps, be best described as the plan of recovery and important as marking the steady resumption of planning, with all its limitations, following the break from around 1974.

Not for Planning Commission

While the plan made something of a recovery, the Planning Commission did not. Not that some of its members were not distinguished and dedicated. But there was no moving on from the dismantling process which had been quite thoroughly done since the mid-1960s. The Planning Commission did not and has not yet come back to where it was and what it was during the Nehru days. Without such a return of its power and prestige, plans may be formulated and even implemented but planning will remain a matter of historical enquiry and not one of the key agencies in the making of history.

The Seventh plan has been duly readied but without too much of public or any other interest, to say the least. Whatever else may be its merits, the advance of the planning process is not among them

Controversy about planning has focussed largely on its economic aspects—growth rate of the GNP, per capita income levels, savings and investment proportions, capital output ratio etc. A great deal of this discussion is meaning less since one cannot say with much certainty how much of this is due to the plan and how much to the spontaneous process of growth. How much one should credit to the guiding hand and how much to the invisible hand, is not clear

Two points, however, can be made in conclusion Paradoxically or dialectically these pertain to the achievements and the shortfalls of planning

One conclusion is that the structural transformations socially and in the narrower economic sense which have occurred since freedom in our country are significant though not substantial. This is because, largely our plans were rightly up to 1964 socio-economic projects. That India is insufficiently transformed is not due to lack of political will—India's planners were reluctant and hesitant transformers

The other conclusion is that the correct, even if curtailed, kind of planning that was envisaged by and in the Nehru-Mahalanobis model was never really given a chance. At best it had seven years of life when interrupted by war and the death of Nehru. It failed because the necessary unity and coalition of social-political forces never materialised as no one ever sought to build it. Nevertheless, planning has increased the chances of building this coalition one of the main planks of whose programme has to be the renewal and advance of planning.

Commission on urban development set up

THE CENTRAL GOVERNMENT has set up a Commission on Urban Development to suggest suitable direction to carry out future urban development programmes and to determine strategies of urban development in the country. It will study demographic, employment, physical. fiscal, shelter, aesthetic and cultural aspects of urban development.

The 11-member Commission will have Shri Charles Correa, a renowned architect of this country, as its Chairman and Shri V. K. Phatak, Chief, Planning Division, Bombay Metropolitan and Regional Development Authority as its Convenor. The Commission will be serviced by the Ministry of Urban Development and the Deputy Secretary (UD) in the Ministry will act as its Secretary. The Commission will submit its report within a period of 9 months.

The Commission will study demographic patterns of cities including the growth of squatter population and employment aspects keeping in view the mass migration to cities. It will examine the physical aspect to determine the holding capacity of a city in terms of deployment of jobs and the pattern of public transport and suggest strategies to increase this capacity by restructuring of major cities.

The possibilities of judicious changes in fiscal policies including review of certain existing legislations like rent control and urban ceiling will also be examined by the Commission and new fiscal strategies which change the pattern of investment across the urban structure will be suggested

The Commission will look into varied experimental work done by different agencies on low-cost housing and identify optimal patterns and densities of shelter units and their groupings and suggest measures to revise the codes of buildings materials

Aesthetic and cultural aspects of urban development will also be studied by the Commission and means of effective urban design controls found to prevent the haphazard development of cities. ☐

Nehruvian humanism, what it is ?

A. Ranganathan

Talking of Nehruvian humanism, the author points out four important facets in the thought processes of Jawaharlal Nehru—the relevance of ethics in politics, the role of an individual in the modern world, the significance of a mixed economy in a developing society, and the impact of technology on cultural values in the Indian setting. The river of Nehru's mind, says the author, derived its creativity from the Indian tradition and was enriched by the streams of western liberalism and Gandhian thought. This resulted in a philosophical confluence that could not be damned up by the Marxian dialectic.

PROF. KARL H. POPPER writes in 'The Open Society and its Enemies, that "the most fundamental problem of all politics is the control of the controller, of the dangerous accumulation of power represented by the State". And in this age, when the totalitarian state has a built-in tendency to acquire what Professor Popper terms 'discretionary powers', Nehru's significance as a humanist lay in his challenge to the orthodoxies of our time. For he was a kind of promethean individual who not only rebelled against the imperialistic and capitalistic hierarchies, but also questioned some of the fundamental assumptions of the Marxian theory of development.

Complete identification with the poor

Pandit Nehru's humanism was not of the academic variety, but could be said to have been derived from his association with the 'Kisan' or Peasant Movement in the old United Provinces (currently known as Uttar Pradesh). The following passage reflected not only Nehru's awareness of the pathetic plight of the Indian peasantry, but also his acceptance of the principle of "complete identification with the poorest of mankind", which Mahatma Gandhi had laid down as the true 'democratic test' . "There they were, these people, looking up with their shining eyes, full of affection, with generations of suffering and poverty behind them, and still pouring out their gratitude and love, and asking for little in return, except fellow-feeling and sympathy. It was impossible not to feel humbled and awed by this abundance of affection and devotion". Here it is worth noting that Nehru's lifelong attempt to make a whole out of apparently disparate elements such as British liberalism, Fabianism, the Marxian dialectic, Vedantic philosophy, Gandhian ethics, and modern scientific thought contributed to a paradigm of that subjective experience which is sometimes egregiously described as the Nehruvian ambivalence of scientific humanism

His infinite capacity for self-sacrifice

Just as the perspectives of Man's relationship with Nature and Man's relationship with the Ultimate Reality constituted the aesthetic foundations of Tagore's humanism, so was Nehru inspired by the spirit of man that enables him to achieve his superiority over the rest of the Universe in a variety of ways. "The revelation of the Infinite" observed Tagore, "is to be seen most fully not in the starry heavens but in the soul of man". Mr. Nehru has caught something of this spirit in his *The Discovery of India* : "How amazing is this spirit of man ! In spite of innumerable failings, man, through the ages, has sacrificed his life and all he held dear for an ideal, for truth, for faith, for country and honour. That ideal may change, but that capacity for self-sacrifice continues, and, because of that, much may

be forgiven to man and it is impossible to lose hope for him. In the midst of disaster, he has not lost his dignity or his faith in the values he cherished. Plaything of nature's mighty forces, less than a speck of dust in this vast universe, he has hurled defiance at the elemental powers, and with his mind, cradle of revolution, sought to master them.........." And Tagore was certainly right in remarking that Nehru was "greater than his deeds and truer than his surroundings'.

Commenting on the influence of Marxism on his mind, Pandit Nehru wrote in his *Autobiography*. "My roots are still perhaps partly in the nineteenth century, and I have been too much influenced by the humanist liberal tradition to get out of it completely. This bourgeois background follows me about and is naturally a source of irritation to many communists. I dislike dogmatism and the treatment of Karl Marx's writings or any other books as revealed scripture which cannot be challenged and heresy hunts which seem to be a feature of modern communism". In the ultimate sense, Nehru was a philosopher-king whose attitude was derived from an attempt to reconcile the twentieth century version of the perennial ideal of harmonizing wisdom with the affairs of the state. Obviously such wisdom cannot be based on mere ideology but must reflect the wider spectrum of the human condition.

Multifacet humanism of Nehru

Four themes recur throughout Nehru's important writings and interosculate with each other : the relevance of ethics in politics, the role of an individual in the modern world, the significance of a mixed economy in a developing society, and the impact of technology on cultural values in the Indian setting. Allied to the first theme is a piece of conversation recorded in Andre Malraux's *Anti-Memoirs*. In response to Malraux's question, 'What has been your greatest difficulty since independence ?', Nehru's immediate reply as 'Creating a just state by just means, I think'. And after a brief pause, as noted by Malraux, Nehru added 'Perhaps, too, creating a secular state in a religious country. Especially when its religion is not founded on an inspired book'. This remark is relevant since it connects Nehru with the tradition of social change in India initiated by Raja Ram Mohan Roy. Roy's contribution to the cause of Indian women through the abolition of 'Sati', Vidyasagar's encouragement of widow remarriage, Malbari's Age of Consent Act in 1891, Sarda's Child Marriage Restraint Act of 1929, Annie Besant's contribution in applying the results of the British suffragette movement to Indian conditions, and B. N. Rau's effort in codifying Hindu Law, which formed the basis for the Hindu Code Bill enacted by Nehru in 1956, are some of the social measures that led to a social revolution—but a social revolution by consent.

Here it would be interesting to reproduce some of the historical reflections of Malraux : "I imagined Stalin hearing : 'Building a just State by just means' and his successors, great and small ; and Hitler before them. And above all Mao Tse Tung, an Asian like Nehru, a liberator like Nehru who would have considered............that a Communist army of ten million men would joyfully transform into people's communes the kingdom of Prince Siddharta and the last Maharajana—and that the fleet of wooden gods would one day float down the Ganges with the ashes of Benares". Ultimately as Nehru put it, Gandhi's basic contribution resolved itself into a "question of means and ends". Nehru did not fully subscribe to the Gandhian perspective which was based on the rejection of giant industries. Equally formidable was Nehru's ethical objection to Communism. In the fundamental sense, it was a Gandhian approach to the problem of means and ends. Here one may recall Gandhi's prediction that "Nehru will speak my language after I am gone". Indeed one can perceive the Gandhian idiom in this sensitive Nehruvian critique of Communism : "Communism has definitely allied itself to an approach of violence. Even if it does not indulge normally in physical violence, its thought is violent, and it does not seek to change by persuasion or peaceful democratic pressures, but coercion and indeed destruction and extermination".

A man of the people

It is a common place to dwell on some of the apparent paradoxes in Nehru's personality. He was usually described as an aristocrat and a man of the people, a student of science endowed with a passion for poetry, an individual with a mass appeal who was a lone figure in the crowd and yet surrounded by it in the solitude of his study. These apparent paradoxes resolve themselves in the broader background of his basic approach to individual liberty. In fact Nehru's love of individual liberty was a part of his Western heritage. For the individual in the liberal West has emerged through the pages of Thomas Hobbes, John Locke, and Maynard Keynes. Just as the individual acquired a new dimension in the political dispensation of Thomas Hobbes who envisaged a civil society derived from a state of competition, so was the political universe of Locke based on the theory that every man is a constellation of rights. Similarly the application of the Keynesian doctrine through the strategy of fiscal planning not only postulates the probability of lessening the fluctuations of the business cycle but is also meant to prevent the State from infringing on the economic freedom of the individual in the final analysis. It ought to be stressed here that Nehru, a darling of the masses, was an essentially solitary figure who, despite his political communion with the masses, did not believe in the concept of the mass man or what Prof. Michael Oakshott characterized as an 'anti-individual'. As Mrs. Indira Gandhi ob-

served : 'He..................was a socialist with an abhorrence of regimentation and a democrat who was anxious to reconcile his faith in civil liberty with the necessity of mitigating economic and social wretchedness'

Vision of peaceful co-existence

Significantly enough, Nehru's emphasis on the peaceful coexistence of the two power blocs was based on his almost intuitive grasp of the economic realities of the international situation. However, he wisely regarded the theoretical possibility of the structural convergence of the capitalistic and communistic societies in a particular context as less important that the application of the concept of a mixed economy in developing countries.

It is well to realize at this point that some of the mature ideas of Prof. Jan Tinbergen, a Nobel Prize winner in Economics, such as the concept of a mixed economy steering clear of the twin dangers of central micro-planning and complete centralization as well as sustaining the welfare of the community through a well-organized system of optimum income distribution, were actually anticipated by Pandit Nehru in the early fifties. For Nehru clearly understood the logic of planning in a mixed economy, which necessitates the maximum degree of discipline, not only in the fiscal sense of being aware of the limits of deficit financing, but also in terms of the reduction of conspicuous consumption as well as the regulation of investment of flows in the arduous process of 'crossing the hump'.

Opposition to ideology

It is not wholly correct to describe Nehru as a liberal socialist or even as a scientific humanist in the conventional sense of the term Furthermore, to refer to Nehru as a sort of Marxist intellectual would be to indulge in character-assasination ! For he was opposed to any ideology that would alienate man from his traditional sources of ethics and aesthetics without giving him a more meaningful life in return. In fact he made us aware that, unless technology is humanized by the springs of art, poetry and science, it may not be possible to realize the wholeness of living. Actually Nehru's uniqueness lay in the fact that he imported a certain philosphic temper into a discussion of the process of change that must inevitably precede the solution of social and economic problems After all, the concept of economic welfare based on an ontological understanding of the unity of the human race is a part of the Indian tradition In the *Bhaja Govindam* which is traditionally ascribed to Sankara—one is exhorted to share his wealth with the have-nots—'Deyam *Deenajanaaya vittam* And in his *The Discovery of India* Nehru confessed that the Marxist philosophical outlook 'did not satisfy me completely. nor did it answer all the question in my mind, and, almost unawares, a vague idealist approach would creep into my mind, something rather akin to the Vedanta approach. It was not a difference between mind and matter, but rather of something that lay beyond the mind'. Again he made this point more specifically just two days before his death : "In India, it is important for us to profit by modern technical processes and increase our production both in agriculture and industry. But in doing so, we must not forget that the essential objective to be aimed at is the quality of individual and the concept of 'dharma' underlying it" In fine, the development of his mind suggests the following lines in Wordsworth's second book of *The Prelude.*

> Who knows the individual hour in which
> His habits were first sown, even as a seed ?
>
> Who that shall point as with a wand and say
>
> 'This portion of the river of my mind
>
> Came from you fountain' ?

The river of Nehru's mind, deriving its creativity from the Indian tradition and enriched by the streams of Western liberalism and Gandhian thought, resulted in a philosophical confluence that could not be damnned up by the Marxian dialectic □

Postal services

THE INDIAN POSTAL Department runs 1,40,000 post offices throughout the country. The Department incurs losses to the tune of Rs. 180 crore annually on account of postal services Besides, the post cards incur losses of Rs. 40 crore per annum Since the postal services are beneficial to the people at large, the Government of India has to put up with such losses.

The 4,800 million people on our planet each year exchange 3,20,000 million articles. The onerous job is performed by 5 million postal officials with a network of 6,40,000 post offices throughout the world. On an average, there is one post office per 7,500 people in the world

The World Post Day is observed on October 9 every year. It was on this day and date in 1874 that the Universal Postal Union (UPU) was founded with the concept of a single universal postal territory The UPU is run by International Bureau of the UPU.

The UPU has 168 member countries affiliated to it It has adopted the Hamburg Declaration, which gives priority to improving the quality of service through the integration of national postal networks.

Family welfare, a voluntary affair

Sharat Kumar
M. Velumurghan
Debabrata Das*

In an evaluation of family welfare programme in Ghatkesher village of Ranga Reddy district (Andhra Pradesh) by the Regional Evaluation office of Planning Commission, the chances of success of family planning on voluntary basis was studied by the authors. According to them, family planning programme can immensely benefit from the services of those who have successfully carried out the programme. The authors feel, that the people generally are logical, realize the difficulty of a big family and prefer small family norms.

FROM THE NATIONAL point of view the well being of the people may be judged on the basis of (a) equitable distribution of wealth and income, and (b) reasonably high levels of per capita income Unfortunately, we fare badly to-day on both the counts Poverty is easily readable—more so far the masses

This is, however, true that we have succeeded in reducing the death rate over the years. The population has therefore doubled from around 36 crore in 1951 to 65 crore in 1981 According to the Swedish demographer Prof Hobstein, this may be looked at as a proof of the economic development at the national level made by India after she achieved her Independence. (Lecture delivered at the Institute of Economic Growth, Delhi, 1981).

However in per capita terms (or for household) a larger population merely reduces the incomes Hence the relevance of family planning programme which can be achieved through reduction in birth rates.

The family planning programme has been going on in our country since 1951. It has so far had very limited success It is the purpose of this paper here to discuss if it has chances of success on a voluntary basis.

It was decided, therefore, to study in depth a sample of fifteen successful cases of sterilization in the Ghatkeshar village of Hayat Nagar block in the Ranga Reddy district of Andhra Pradesh. This village has a civil dispensary It was our purpose to probe into the cases of vasectomy operations only But, since we could not get even fifteen cases of vasectomy we had to finally supplement this number through taking into account the cases of tubectomy operations on women. Moreover, we undertook to study only such cases, which were operated upon between the years of 1980 and 1982. Our own survey was conducted in, May, 1982

Infant mortality still high

The survey showed that parents by and large have preference for male children. Moreover, they are in general not satisfied with one child and want to have two sons and two daughters. This attitude is generally attributed to the uncertainties involved in the survival of one son|one daughter. For instance, the estimates of infant mortality for 1976 available from the Sample Registration Schemes (SRS) of the Registrar General of India shows that this rate (death rate amongst infants) is still as high as 139 in rural areas.

80 in urban areas and 129 in the country as a whole. The pre-school death rate among 0 to 4 age group is also around 57 per 1000.

The preference of four children against the Family Planning Programme's slogan of two or three children may be observed from the following table.

Table 1.

Sl. No		No of cases	Percentage of total
1.	After 3 children	2	13 33
2.	After 4 children	8	53 33
3	After 5 children	3	20 00
4.	After 6 children	0	00 00
5.	After 7 children	1	6 67
6.	After 8 children	1	6 67
	TOTAL	15	100 00

As could be seen from the table above the maximum number of operation for sterilization were undergone after having borne four children. In percentage terms this constituted 53 per cent of the total. In our opinion this psychology is equally true for couples in the cities as well. It could, however, be argued that the city life in higher income groups places some deterrent on the number of children to be borne. This may perhaps be due to higher expectations of the parents from their children when they grow up as young men and women. This is, however, not so in the villages, particularly for the poor parents.

Moreover, though the Family Planning Programme has been heard of by most of the people, it is not popular amongst them. Somehow it has come to be identified with the use of condoms (Nirodh) which is embarassing to the users. Moreover, condoms can at best help spacing the birth of children and do not completely prevent births.

Women bear the brunt !

With respect to vasectomy and tubectomy, the latter appears to outrun the former Of the 5,215 sterilizations done during 1981-82 in the district of Ranga Reddy 5,005 were cases of tubectomies and only 210 cases were those of vasectomies. The reason for this limited success of vasectomies were attributed to the following reasons :

(i) It is the women and not the men who have to bear the pains of child birth,

(ii) The vasectomy campaign through coercion organised during 1976 has left bitter memories in the minds of people and they are outrightly against it, and

(iii) The failure in the vasectomy cases as a result of which the wives conceived children has raised doubts about its acceptance.

These reasons, however, do not convince us fully of its non-acceptance. For instance, when men have adopted the concept of family why should they run away from undergoing a smaller operation compared to the one's the wives have to undergo. It appears to us, therefore, that both vasectomy and tubectomy have all chances of success in India. In other words, it is a question of right approach. One leeway which promises success in Family Planning Programme is the further simplification of surgical operations The following table is of interest in this regard.

Table 2

Reasons of appeal for Family Planning Programme

Sl No		No of cases	Percentage out of 15
1	Small family	8	53 33
2	Enough children	8	53 33
3	Wife's health	0	00 00
4.	Economic reasons	4	26 67

In fact it was heartening to note that a breakthrough has been made in regard to operation on women. The new method of laparascope is one such achievement. It is simpler than tubectomy. Furthermore, it ensures mothers to bear children at a later date if they wish to do so.

Nevertheless, it is essential to note that initial failures for whatever reasons cause grave doubts in the minds of the people and the whole scneme meets big resistance. For instance, in the case of our respondents we came across the following observations .

Table 3

Condition after operation

Sl No		No of cases	Percentage of the total
1	Complains	6	40 percent
2.	No complains	9	60 percent

It were the women with tubectomy cases who complained more of having pain in the neck as well as some back-ache. This was mentioned to us by the Secretary, Health & Family Planning, Government of Andhra Pradesh as well. It was pointed that it is for these reasons that the Government is very cautious in launching the laparascopic method of reducing birth rates. They are very carefully choosing the doctors who would be given training to do this operation. It is good to see them determined to get no bad name in this regard.

Clues for success

We further believe that a few more suggestions can be made for the success of the Family Planning Programme, namely, (a) complete sterilization either by the husband or the wife after begetting certain number of children, say, two or three or four, (b) complete sterilization by the husband after he attains the age of 45 to 50 years beyond which the uncertainties of his own life reduce the chances of rearing

(continued on page 21)

Popularising family welfare among tribals

G. Gurumurthy

Based on a study of socio-cultural determinants of fertility among Yanadi tribes of Andhra Pradesh, the author calls for an urgent effort to promote family planning among the tribals as contraception is yet to find general acceptance there. He is of the view that scientific education on the importance of small family norm, sex education, contraception, physiology of reproduction with proper motivation and necessary incentives, will go a long way in popularising family planning among these tribes, says the author.

MOST OF THE studies carried out in India and other developing countries reveal the characteristics of the general population (Freedman and Takeshita, 1969; KIRBS, 1971; Freedman and Coombs, 1974; and Kurup, 1975). But, about traditional societies, and particularly tribal societies, only a very few empirical studies have been carried out so far to explore the KAP level of contraceptive behaviour of the couples among tribals (Lorimer, 1954, Nag, 1968 & 1973 and Bhomick, 1971). They are evident from the status studies carried out in India (Kamala Gopal Rao, 1974; Udai Pareek, 1975; and Desai, 1972). Under these circumstances, it was decided to take a major tribal group from this part of the country for the study of the present research.

Yanadis are a tribal community inhabiting the hilly areas, mostly in Chittoor and Nellore districts of Rayalaseema region and spread over the rest of Andhra Pradesh as well. They are the second largest group with the population of 2,39,406 among the tribal groups of Andhra Pradesh. Yanadis are comparatively a backward tribe and have many complex features.

Objective and methodology

The main objective of the present research is to study the knowledge, attitude and practice of family planning in relation to fertility behaviour among Yanadi tribal population in South India. A simple random sampling procedure was adopted for selection of sample and the size of the sample was fixed as 600 eligible couples. The sample was selected from a list of households of all Yanadis from all villages belonging to Srikalahasthi and Thottambedu taluks in Chittoor district For selection of sample at the first instance all villages where Yanadis are living were listed out. Subsequently, their households were enumerated. From every household only one eligible couple is included in the sample Further, eligible couple with two or more live births alone were considered. An appropriate interview schedule which was prepared for the purpose was applied for the collection of data from the respondents For testing significance the 't-test' was adopted The review of literature, findings and discussions are indicated below.

Review of literature

Contraception was common in the past in traditional hunter-gatherer societies who practised traditional methods viz., coitus interrupts, abstinence, rhythm douche, inserting some material in vagina, drinking of salt water immediately after coitus, turning of the womb, abortion and other indigeneous methods and medicines prepared with herbs and leaves which were available with local indigeneous medical practitioners Besides, they also followed certain customs and beliefs i.e., using of iron ring and leather belt by females as a method of birth control (Das et al., 1961

Olusanya, 1964; Acsadi, 1970; and Polga et al., 1976).

Advancement of modern technology and through the efforts of population education several modern methods of contraception namely vasectomy, tubectomy, condom, IUD, abortion, oral pills and other temporary methods are being introduced in several communities. Till recently, the practice of contraception has been very low in developing countries (11.48%) as compared to developed countries (70—85%). However, there is an increasing trend in practising family planning, during the last two decades. For example in Taiwan it was 38 per cent in 1965 and has almost doubled to 72 per cent in 1970 (Freedman and Coombs, 1974 and Chaudhury 1982).

It is found from many KAP studies in India and other developing countries, that the awareness was very high (around 80%) and the practice was very low (Desai 1972; Kurup 1975; Siddique 1965, Poffenberger, 1975; KIRBS 1971; and Ajami 1976). In some of the societies they had very poor knowledge about the modern methods of contraception. For example, Gujjar tribe in India did not believe in contraception and considered it as anti-social. In fact family planning was not known to them and they never practised abortion. They were the followers of Islam and they felt that none should break the laws of God (Shashi 1978). Similarly Yoruba tribe in Nigeria, though they used to practice traditional methods of contraception, had unlimited natural fertility i.e., the total fertility rate was 7 (Acsadi, 1970).

The practise of contraception varied from society to society and it depends upon the socio-economic, demographic and cultural factors. It has a positive association with socio-economic status and a negative association with fertility behaviour (Desai, 1972, and Fawcett, 1977) The practise of contraception varied by age i.e., higher among younger age groups (women) and lower for higher age (35+years) group both in developing and developed countries (Omran and Standley, 1981 and Chaudhury 1982). It was higher among educated women as compared to illiterates. For example, the contraceptive practice in India was 10 per cent among illiterates and 49 7 per cent among women with secondary education (ORG, Baroda, 1973).

Results and discussion

Family planning is an important variable influencing the reduction of fertility in modern times The adoption of family planning depends upon the policy of the particular government. The knowledge, attitude and practice of various methods of contraception have been discussed in this section in relation to their fertility behaviour. About 86 per cent of them had heard about one or more methods of contraception for preventing pregnancy or postponing birth. The knowledge on various methods of contraception is shown in table 1.

Table 1

Percentage of respondents by the methods of contrace[illegible] known/unknown to them

Name of the method of contraception	Known	Unknown
Vasectomy	82 8	17.2
Tubectomy	82 2	17.8
Condom or Loop*	24 2	75.8
Abortion as a method of contraception	31.8	68.2

* The other temporary methods like oral pills, foam tablets jelly etc are not included since they are not applicale to this population which is found in the exploratory study.

It is found from table 1, that majority of them knew about permanent methods of contraception namely vasectomy and tubectomy. After identifying the knowledge of Yanadis on contraceptive methods an attempt is made to study the attitude of respondents towards family planning Among temporary methods of family planning, some methods like condom, loop and abortion are included in the study since the respondents do not possess much knowledge on other temporary methods viz., oral pills, foam tablets, jelly and diaphram. The general opinion about family planning was that it was good (65 per cent). The other group of 35 per cent stated that it is bad and they dislike the methods. The reasons expressed for negative attitude towards family planning were based mostly on health grounds, child mortality, fear of impotency and sin. The attitude of respondents on various methods of contraception is shown in table 2.

Table 2

Percentage of respondents by their attitude towards family planning

Name of the method	Favourable	Unfavourable	Can't say
Vasectomy	44 0	55 3	0 7
Tubectomy	40 3	56 8	2 2
Temporary methods	12 3	70 2	17.5

Table 2 explains, that a majority of respondents did not show favourable attitude towards the method of contraception. However, about 40 to 44 per cent of them have shown favourable attitude for vasectomy and tubectomy. This is similar to many tribal studies conducted by Shashi (1978); Acsadi, (1970); Allman (1978); and Caldwell (1982).

It is also noted from the sample that 26 per cent of the respondents practise both modern and traditional methods of contraception The traditional methods they used were herbs, leaves and other indigeneous medicines supplied by local people, mainly women. The traditional medicines used by the respondents as a method of contraception were the milk of calotropisgantia leaves (Zilledipalu), the leaves of trigonella-foenumgraccum (tablets from menthi leaves), the roots of dioscorea (pendalam) and tablets made out of

turmeric powder. It is learnt from them that the medicine is administered at the time of delivery (post partum period) and the woman was asked to practice the same for more than a month. Nevertheless, it is observed that the women practising traditional methods are not successful in their fertility regulating method. Besides this, a few people practise the traditional method of abstinence and rhythum method occasionally.

In this tribal community an overwhelming proportion of respondents (74.3%) are not practising any method of contraception. Among the respondents who practised contraception, about one-fifth of them (21.2%) adopted the permanent methods of contraception viz., vasectomy and tubectomy irrespective of different age cohorts. The women who practised traditional methods and abortion are insignificant in number (4.5%). The various methods of contraception practised by the respondents and their fertility behaviour are shown in Table 3.

per cent), postponing the method of adoption for next issue (15.5 per cent), disliked the method (12.3 per cent), waiting for some more children (10.3 per cent), nearing menopause (8.5 per cent), fear of health (5.7 per cent), fear of survival of the existing children and not aware of the advantages of small family norm (5.5 per cent).

A slightly less than half (48 per cent) of respondents expressed the reasons as disliked the method and for postponing for next issue etc, they had higher fertility of 4.2 live births as compared to others who wait for some more children (10 per cent), and|or sons (16.5 per cent). This may be on account of higher percentage of illiteracy among them Generally, people who are against the adoption of family planning, have higher fertility due to their wrong notions which is found even in this tribal community.

Since the extent of modern contraception is very

TABLE—3

Mean number of live births by method of contraception

Name of method of contraception	Duration of married life in years				
	Upto 10	11 to 20	21 +	Total	S D
I. Not using any method	2.1 (173)	3.8 (160)	5.4 (113)	3.6 (446)	1.8
II. Using Vasectomy	2.5 (1[illegible])	3.4 (45)	5.3 (27)	3.9 (84)	1.9
III. Using tubectomy	2.9 (8)	4.1 (27)	5.5 (8)	4.1 (43)	1.5
IV. Using traditional method	3.3 (7)	4.5 (14)	6.7 (3)	4.4 (24)	1.7
V. Abortion as a temporary method	2.0 (1)	5.0 (2)	—	4.0 (3)	1.4
TOTAL :	2.4 (201)	3.8 (248)	5.5 (151)	3.7 (600)	1.8

Figures in parenthesis indicate the number of women

't' cal (I & II) = 1.4 at 0.05 LOS (—)

't' cal (I & III) = 2.05 at 0.05 LOS *

't' cal (I & IV) = 2.24 at 0.05 LOS*

* Indicated the difference in mean live births between the people using family planning methods and not using them have a statistically significant difference when 't' cal value is greater than 't' cri (1.96) at 5 per cent level of significance

(—) indicated statistically not significant difference.

Findings

It is found from the table 3 that about three-fourths of the people who did not use any method of contraception had lower fertility of 3.6 live births, as compared to the other one-fourth of respondents who practised some method of contraception. This shows the respondents who have lower fertility may practise contraception in future only after begetting sufficient number of additional children. Vasectomised persons had a lower fertility of 3.9 live births as compared to those who adopted tubectomy (4.1) and traditional methods (4.4). Similar trend is noticed across all the age cohorts. Several reasons have been expressed for their non-contraception. They are : waiting for sons (16.5

low among Yanadis, and they are also not in favour of modern methods of family planning, an intensive effort is needed among this population to bring them under the coverage of family planning programme. Since they are poor and illiterate, mere education may not be sufficient. However, most of them have already attained a higher fertility even making allowance for probable loss of one child in the future in the context of existing mortality. An urgent effort is needed to promote family planning among them. In this context population education coupled with incentives and supplementary nutrition programmes for mothers and children, may help in rapid acceptance of family planning by this community.

Summary and conclusion

The knowledge, attitude and practice of various methods of contraception have been studied. About 86 per cent of respondents had heard about one or more methods of contraception for preventing or postponing pregnancy. It is found that an overwhelming proportion knew about permanent methods of contraception namely vasectomy and tubectomy, but they are ignorant about temporary methods of contraception. Further, the general opinion of the respondents was that family planning is good (65 per cent) while the remaining 35 per cent disliked the methods. However, about 40 to 44 per cent of them have shown favourable attitude for sterilisation.

By and large 26 per cent of respondents practised both modern and traditional methods of contraception, about 21 per cent adopted the permanent methods of contraception viz., vasectomy and tubectomy irrespective of different age cohorts. The women who practised traditional methods and abortions form only insignificant (4 5 per cent) percentage Finally when the reasons are elicited from the respondents who are unfavourable towards family planning adoption, it is found that they are based mostly on health grounds, waiting for sons, for some more children, postponing the method for next issue, perception of child mortality, fear of impotency and sin. Therefore, contraception is yet to find general acceptance in this tribal community The preceding findings suggest the need for scientific education on the importance of small family norm, sex education and contraception The findings also focus on the urgent necessity of educating the tribals on physiology of reproduction in order to remove their unscientific notion on child-birth If appropriate education is not imparted to the tribal people to change their wrong beliefs, these people may continue to remain unfavourable to family planning □

(*Contd from page* 17)

the children himself, (c) late marriages which could reduce the number of children any women can bear

In the table below we indicate the age of marriage of the different couples under our sample study —

Table 4

Age at Marriage

	15 & below	20 & below	30 & below	Over 30
1 Famale	11	3	1	0
2. Male	0	10	3	2

It is obvious from the table above that the majority of the females at the time of marriage belonged to the age group below 15 years. It is, therefore, that the element of education becomes important. But what do we mean by this expression. If education be understood as sending children to schools which would enable them to read and write, and so on this would perhaps not help the Family Planning directly. If, however, it helps in enhancing the age limit of marriage more particularly for the girls (as it is claimed to have happened in Kerala) this would certainly serve the Family Planning programme.

But more than this as far as the existing couples in the reproduction age group is concerned : literate or illeterate the most effective method of education would be demonstration of successful cases by the people who have already undergone the operation. This may be observed from the table below which shows of the fifteen cases surveyed as high as sixty per cent of the respondents were influenced by the personal localite source of information.

Table 5

Effective source of information

		No of cases	Percentage of the total
1 Personal	Localite	9	60 00
	Cosmopolite	5	33 33
2. Mass Media*		7	46 67

NOTE * —This includes (i) as well

According to us, the Family Planning Programme can immensely benefit from the services of those who have been successfully operated. It would not be a bad idea if all those who have undergone operations are issued a certificate of Responsible Citizens by the Ministry of Health & Family welfare.

It is clear, therefore, that the people at large are logical, they realize the difficulties of a big family and have preference (today) for small families □

Promotion of Khadi

ON THE OCCASION of the Gandhi Jayanti, 1985 the Central Government announced special rebate of 30 per cent on Khadi and Readymade, 15 per cent on Silk Reeled (Sarees etc) and 25 per cent on Silk Spun (Matka, Andi, Katia).

During 1984-85, the Khadi and Village Industries Commission produced 127 million square meters of Khadi. The target for Seventh Plan is 178 million square meters The sales which touched Rs. 153 crore during 1984-85 are likely to go up to Rs. 200 crore this year The amount of rebate will correspondingly increase from Rs. 23 crore to 30 crore. □

Micro-level educational planning

Haripad R. Subramoniaiyer

There are wide disparities in educational opportunities available to various sections of population. The author says that the answer to the problem is micro-level educational planning to link education effectively to the needs of the local people, particularly to vocation and development. How it could be done, he suggests the methodology.

THE PRESENT INDIAN planning system, has achieved economic growth but it has not succeeded in achieving social justice. In spite of three and a half decades of planned economic development, the basic problems of poverty including educational backwardness, unemployment, inequality, and regional socio-economic imbalances still exist. In other words, even though there is overall economic growth and development, social development and development of human resources have greatly lagged behind.

In the Directive Principles of State Policy of the Constitution of India, it is stated "that the States shall endeavour to provide for free and compulsory education for all children until they complete the age of fourteen years (Article 45) and the state shall promote with special care the educational and economic interests of the weaker sections of the people and, in particular, of the scheduled castes and scheduled tribes and shall protect them from social injustices and all forms of exploitation (Article 46)."

It must be remembered that of the 684 million population in 1981, only 248 million, i.e. 36 per cent are literate and the remaining 436 million can be considered as the impoverished groups. This is a challenge to educational planners, policy makers, administrators and the entire people. Education is an important area of concern in social justice and human development. It is a fact that the children of the disadvantaged groups have no access to education and hence education is still beyond the reach of the mass of the people.

Educational Planning

The main reason for this sorry state of affairs is the existing top—down and centralised planning process which has not reached the village level. Since education is a long term activity, educational planning should have a long term perspective. Hence there is need to evolve an alternative educational planning strategy in order to take education to the children of the disadvantaged groups and in a manner convenient to them and with a curriculum content relevant to their needs. It should also be relevant to local culture and environment

The inadequacy of the existing educational planning system has resulted in inequitable distribution of educational opportunities among the various groups and regions. This necessitates the need for micro-level educational planning. Micro-level educational planning may be defined as indentifying the specific educational needs and problems of the children of the disadvantaged groups, assessing the existing educational facilities in the locality, formulating appropriate educational programmes and projects with active involvement of local human resources, identifying, mobilising and utilising local material and man power resources and implementing programmes and projects so as to cater to the local specific needs. The ultimate goal is to link education effectively to the needs of the local people, to vocation and to development.

Micro-level planning

Micro-level educational planning is imperative since educational needs, problems, priorities, requirements and solutions vary according to local conditions. If constitutional directive of universal primary education of a suitable quality for all children with special emphasis on education of girls is to be translated into action, micro-level educational planning is indispensable.

Objectives

The major objectives of micro-level educational planning are :—

1. to solve the tremendous problem of educational poverty.
2. to reduce disparities in the quality of education offered to the poor and the well to-do,
3. to reduce the educational gap in terms of educational opportunities and facilities not only between the urban and the rural areas, but also between the urban and the rural rich on the one hand and the urban and the rural poor on the other,
4. to ensure geographical spread of educational opportunities and facilities,
5. to improve the educational status of the disadvantaged groups,
6. to bring educational planning and administration as close to the beneficiaries as possible,
7. to reflect the educational needs, problems and priorities of the people of a particular area,
8. to build up pressures to re-orient national educational policies at the micro-level in their favour,
9. to promote beneficiary participation in educational planning and to convince the beneficiaries that the plans drawn up is indeed their own and for their benefit.

Methodology

Micro-level educational planning involves the following methodology :

— Define national goals of educational planning on the basis of the existing nature of the educational situation, needs, and problems in their historical perspective,

— Identify and determine short and long term objectives,

— Determine appropriate strategies and evolve coherent educational policy measures for achieving the objectives,

— Formulate specific, consistent educational programmes and projects in their physical and financial dimensions and specification of their temporal and special dimensions,

— Identify a viable unit for educational planning at the micro-level,

— Survey of all the households in the unit in order to have an indepth knowledge of the various constituents of the unit and knowledge of the resource position and requirements,

— A diagnostic analysis of the nature of the existing situation, needs and problems of the locality,

— Identify the children of the disadvantaged groups and ascertain their specific educational needs, problems and priorities and also assess the educational facilities in the locality,

— Identify the gaps and pitfalls in the education system in a particular locality,

— Identify and formulate appropriate educational programmes and projects exclusively for the disadvantaged groups of children in consonance with the national goals and objectives and programmes for local area development,

— establish their spatial and temporal linkages within an integrated framework,

— Identify appropriate location of educational institutions taking care of the accessibility of the development groups,

— Relate the content, method and timing of education to the needs of the disadvantaged groups and locality,

— proper motivation of the disadvantaged groups in order to improve their educational status,

— Identify and mobilise resources of the government, private and voluntary sectors and also of the local community for educational development and prepare their inventory,

— Involve parents in the educational programmes of disadvantaged children,

— Appropriate integration of micro-level educational plan with micro-level educational plans,

— organic linkages of educational plan with socio-economic development plans both at the micro-and macro-levels.

(*Contd. on page No.* 28)

Developing drought-prone areas

Dr. Neelmani P. Varma

Drought is a regular constraint on the Indian economy. On an average one-third of the country is under drought resulting in annual loss of Rs. 15,000 *to* 20,000 *million. Through the Drought Prone Area Programme (DPAP) Government is trying to give the maximum possible relief to people in the affected areas. The author, however, points out that there is need to change the existing identification criteria of a drought-prone area and also the need to ensure that the existing facilities are available more to the small and marginal farmers.*

DROUGHT HAS BEEN one of the serious problems of Indian agriculture. It causes widespread damage to standing crops; hence food shortage. Also it causes heavy loss of livestock and other hardships A large part of India often suffers from drought losses. According to an estimation of the Central Water Commission (Government of India, 1982) about one-third of India is affected by drought. The average annual loss on account of drought is estimated to be Rs. 15,000 to 20,000 million. This year also drought affected several states :—Andhra Pradesh, Karnataka, Maharashtra and Orissa. On a rough estimate 31 lakh farmers were hit by drought and the total crop loss was to the tune of Rs. 850 crore.

The present exercise seeks to study the role of Drought Prone Area Programme (DPAP) which is a specific programme for the development of drought-prone areas.

In order to mitigate the immediate problems of drought-affected areas a Rural Works Programme was started in 1970-71 in 54 districts of India. This programme concentrated on generation of employment opportunities in these districts. It was subsequently felt that the programme, with the limited perspective of accelerating employment, would be more in the nature of social welfare schemes rather than development schemes. Hence, after the mid-term appraisal of the Fourth Five Year Plan, Rural Works Programme was modified and made more comprehensive to include the objective of drought mitigation and was reoriented as DPAP. Since then in each successive plan the DPAP has got due weight.

The objectives of the DPAP highlighted in successive plans are as follows :—

What it aims at

(a) Integrated area development, meaning thereby planning by diverse aspects of development in a coordinated manner for achieving the gross results such as universalisation of welfare, raising standard of living through increasing income by providing employment opportunities. The generation of employment can take place in various sectors of rural India such as management of water resources, livestock and dairy development projects and development of allied activities.

(b) Restoration of ecological balance which has much of its bearing on increasing magnitude of rainfall, and

(c) Conservation of soil moisture, restructuring of cropping pattern, assistance to small/marginal farmers and landless labourers, development of communication infrastructure and proper facilities of potable water.

Thus these objectives were inter-related and were in operation in 73 districts of India for strengthening the viability of the vulnerable people in the foreseeable future.

How to identify

There are no universally accepted norms of defining an area as 'drought-prone'. However, in India criteria usually followed for identification are those of the Irrigation Commission (1972) and of the National Commission on Agriculture (1976). But the Irrigation Commission follows the criteria of the Indian Meteorological Department which concedes three types of drought. A situation of 'drought' exists in an area in a year when the rainfall in the area is less than 25 per cent of the normal. The situation of 'moderate drought' exists when the rainfall deficit is between 25 to 50 per cent. And the situation of 'severe drought' exists when the rainfall deficit is above 50 per cent. Areas where drought has occurred in 20 per cent of the year examined, is identified as 'chronic drought areas'. In this taxonomy, areas having 30 per cent of the cropped area under irrigation are not . considered as drought affected.

According to the National Commission on Agriculture, agricultural drought has been defined to be an occasion when the rainfall in a week is half of the normal or less (where the normal weekly rainfall is 5 m.m. or more). If there are four such consecutive weeks in a rainy season or six such consecutive weeks during other seasons, the area is declared as drought-affected area.

A couple of facts stand out very clearly from the above analysis of identification of drought. Firstly, an area having only 30 per cent of irrigation facilities is usually not defined as drought-prone, even though seventy per cent of the area will be affected by drought if the rainfall is insufficient. Thus, the definition suffers from under estimation. Secondly, the requirement of water differs from crop to crop. This implies that definition of drought should be made on the basis of need of water for different crops. According to the rainfall criterion, an area can be drought-affected if a particular crop does not get sufficient rainfall. Thus drought should be defined in the light of the need of rainfall for individual crops, The present criterion neglects the nature of soil moisture for determining the level of normal rainfall. In a particular area water may evaporate (transpirate very soon as happens in rocky area (Purulia district of West Bengal. Thus porosity (soil should be considered as one of the essential par: meters while identifying an area as drought-affecte(

Achievements of DPAP

The best way of evaluating a programme is to se whether achievements of the programme are in con formity with its objectives or not. If achievemen deviate from objectives, the programme should t considered to have flopped, fully or partially, depen(ing on the margin of deviation. In Table 1, secto wise outlay, expenditure and employment generate during the Fourth and Five Year Plans have bee shown. Since in the Sixth Five Year Plan no targ(was fixed, the amount incurred and employment ge nerated during 1980-81 to 1982-83 have been show as per information taken from the Mid-term Appra sal, 1980—85.

A couple of facts comes out clearly from Table Firstly, the fund allocated has not been fully utilise during the respective plan periods. The percentag expenditure to total outlay was 42.6 during th Fourth Five Year Plan, 73.0 per cent in th Fifth Five Year Plan and 73.9 per cent during th first half of the Sixth Five Year Plan. The percen' age of expenditure on irrigation accounted for 37. per cent in the Fourth Five Year Plan and 72.6 pe cent in the Fifth Five Year Plan. This implies th: efforts for development of the drought-affected are: were undertaken half-heartedly.

Secondly, the outlay allocated for sectors such a soil conservation, afforestation and others whic include outlay for drinking water and horticultu1 was very low as compared to that of the irrigatio1 It should be noted that these three sectors are a much important for a drought-prone area as irriga tion. The soil conservation helps preserve so fertility, afforestation maintains ecological balanc and potable water is just one of the basic needs (the people of drought-prone areas.

Furthermore, substantial money should be sper in sectors like afforestation and soil conservation. ' can be seen from Table 2 that employment gener: tion per lakh of rupees in soil conservation an afforestation sectors accounted for 48.4 an

Table 1

Sectorwise Outlay expenditure and employment generated in drought prone areas during the Plan

Sectors	Outlay (Rs in lakhs)	Expenditure (Rs in lakhs)	%Expenditure of the total outlay	Employment Generated (1000 mandays)
FOURTH FIVE YEAR PLAN				
Irrigation	6 06 09 (53 45)	[illegible],769 49 (47 39)	37 7	33,948 (35 83)
Soil Conservation	914 43 (8 1)	477 03 (9 96)	5[illegible]	23,080 (24 36)
Afforestation	905 54 (8 05)	39[illegible] 15 (8 19)	43 3	10 747 (11 34)
Roads	2,836 31 (25 20)	1,545 6[illegible] (32 27)	54 5	[illegible]6,794 (28 8)
Others	580 80 (5 16)	104 67 (2 19)	18 0	9168 (10 18)
TOTAL	11,[illegible]55 17 (100 00)	4,788 96 (100 00)	4[illegible] 6	94737 (100 00
FIFTH FIVE YEAR PLAN				
Agriculture	4,010 25 (15 47)	[illegible],797 4 (4 8)	69 8	11.8[illegible]6 (28.84)
Irrigation	12,704 45 (49 03)	9,146 65 (48 50)	72 0	12,850 (32 17)
Afforestation	2,873 45 (11 09)	[illegible],511 44 (13 39)	87 0	11,668 (29 21)
Animal Husbandry	3,758 68 (14 51)	2 481 74 (13 16)	66 0	1,375 (3.45)
Others	2,552 30 (9 85)	1,960 51 (10 3)	78 8	2,524 (6 32)
Total	[illegible]5 909 13 (100 00)	18 897 63 (100 00)	73 0	39 939 (100 00)
SIXTH FIVE YEAR PLAN (Upto December, 1983)				
TOTAL	25,100	18,563	73 9	1,04 548

NOTE —Figures in parentheses refer to percentage figures

Source . DPAP : Financial outlay and Expenditure at a Glance, Fifth Plan, 1974-75 to 1977-78 and Mid-Term Appraisal (1980-85)

Table 2

Employment expenditure ratio during the Plans

Sectors	Employment Coefficients (in mandays per lakh of Rs)		
	Fourth Plan	Fifth Plan	Sixth Plan
Agriculture	.	4 1	
Irrigation	15 0	3 0	
Afforestation	27 4	4 6	
Soil Conservation	48 4		
Afforestation	27 4	0 6	
Roads	17 3		
Animal Husbandry		0 6	
Others	1 6	1 3	
Total	19 8	2 9	7 5

27.4 mandays respectively during the Fourth Five Year Plan Even during the Fifth Five Year Plan the corresponding figures were higher than any other sector

What are the Constraints

Thus, as analysed above, there is a remarkable gap in outlay allocated and expenditure incurred. Important constraints which have been observed through field visits of three drought-affected districts, namely Manendragarh district in Haryana, Udhampur district in Jammu & Kashmir and Purulia district in West Bengal are as follows.

(a) Optimum utilization of the funds allocated is not possible either owing to paucity of relevant data

a particular district, or analysis of such data, though available, do not reveal clearly the optimum potential of return. Besides, detailed information has also been lacking in regard to the degree of problems which impede the flow of funds of credit to the weaker sections. In addition to these problems, several problems stand out at the operational level of the programme. There is no clearcut coordination between the operational approaches of other rural development schemes.

(b) The programme is not implemented on the basis of economic rationality. For instance, construction of road was undertaken without any consideration of quality of land. Afforestation for soil and water conservation was not linked with the plantation in the catchment area of tanks or ponds. Instead of marginal land better quality land has been used.

(c) On the one hand, the very objective is to preserve ecological balance but, in contrast, most of the people use forest for fuel as well as for other purposes. Since the perspective programmes are not chalked out by technical experts, no cost—benefit consideration was made while sanctioning a project. Most of the projects are facing cost or time overruns. The completion of so many irrigation projects was delayed due to lack of cement and other such materials including acquisition of land for irrigation, work Since the holdings in these areas are very small, this hinders proper credit facilities from the organised financial markets and thus unorganised agencies get benefited by charging higher rate of interest with collateral or without collateral

Most of the poor people hesitate to participate in the programme because of lack of knowledge about its operation and other objectives. Thus affluent and educated farmers are becoming better off by getting more credit facilities on lower rates of interest and having more access to other public facilities such as public irrigation, distribution of fertiliser and nutrients in time and so on. This impedes the diffusion of the adoption of modern techniques of farming as small|marginal farmers lack capital (credit or otherwise) and literacy. Since landlords and moneylenders-cum-traders charge higher rate of interest and also sell accumulated inventories (foodgrains) at higher prices during drought, apparently they are the least sufferers from drought. Even if small|marginal farmers and agricultural or other labourers get some credit for some productive purposes, it is consumed by them for paying higher prices for foodgrains. Thus the ultimate beneficiaries are landlords and moneylender-cum-traders. Down-trodden people are always bedevilled.

Need for urgent changes

What is, therefore, needed is not only to change the existing identification citeria of a drought-prone area but also to make existing infrastructures acces-

target-group oriented development policies within the area-speific programme such as the DPAP. Emphasis should be given on improving the situation of research infrastructures so that problems of water management, soil conservation, afforestation etc. can be solved. Deforestation which contradicts the very objective of the progrmme should be abandoned. Farmers of this area should be provided drought resistant seeds of different crops depending on the nature of soil. Possibility of substituting ground and surface water by artificial rain in the drought hit areas should also be explored. ☐

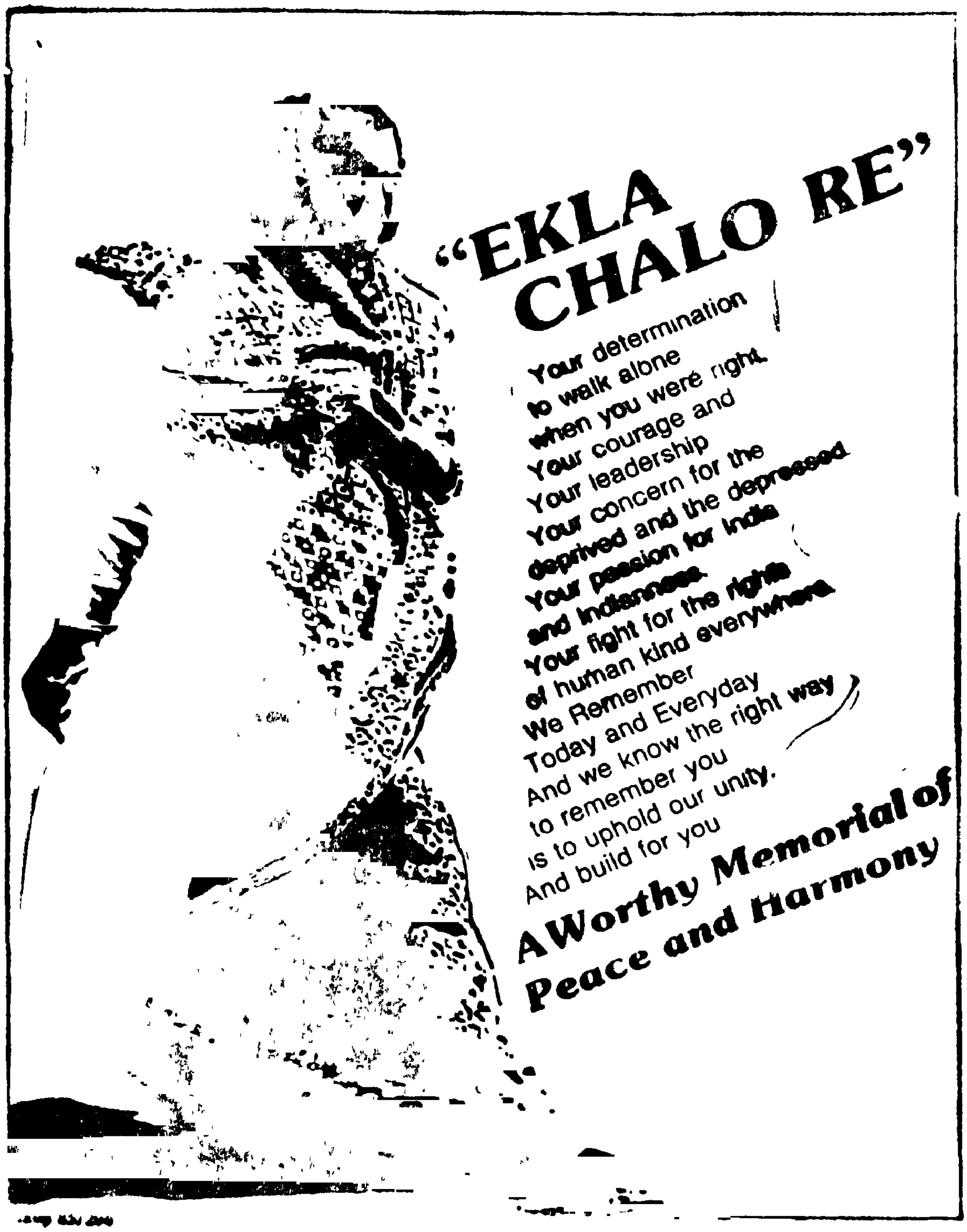
(Continued from page 23)

— Planning of plan implementation, and

— Implementation of educational programmes and projects in order to cater to the specific needs of the locality. These are the stages of micro-level educational planning.

Any reform must begin from the grassroots and education is not an exception. Micro-level educational planning is a specified form of decentralised planning at various territorial levels based on the realistic assessment of the present and future educational needs of the children of the disadvantaged groups in order to bring the children of disadvantaged groups and girls to school, prevent dropouts and relate education to the needs of the society.

It provides educational opportunities for the children of disadvantaged groups and facilities in the locality by integrating government, private and local community resources in order to improve their educational status. It also reduces the educational gap between the urban and the rural areas as well as between the urban and the rural rich on the one hand and the urban and the rural poor on the other Micro-level educational planning is definitely an answer to solve the problems of educational poverty and lack of educational opportunities and facilities among the disadvantaged groups so as to achieve economic growth with social justice in the field of education.


"EKLA CHALO RE"
Your determination
to walk alone
when you were right
Your courage and
Your leadership
Your concern for the
deprived and the depressed
Your passion for India
and Indianness
Your fight for the rights
of human kind everywhere
We Remember
Today and Everyday
And we know the right way
to remember you
is to uphold our unity.
And build for you
A Worthy Memorial of
Peace and Harmony

Future of optical fibre in communication

Lallan P. Rai & A. Ghosal

In this paper the authors highlight the role of optical fibre in different areas, particularly in communication as just cost effective technology for infrastructural development The optical fibre technology is one of the thrust areas for R and D activity identified by the Ministry of Communications. The authors also present a demand forecast for the system for India and the world.

MODERN AGE OF Science and Technology will nder many technologies, howsoever important today, redundant by the turn of this century. Recent evelopment in Science and Technology will force entists, engineers and decision makers to look for propriate technology which has to take care of not ly present requirements but should be comparable ough with later technological developments.

It is well known that infrastructural facilities play important role in allround development of econo-. There is need to identify fast and cost effective hnologies required for infrastructural developments. e of these essential facilities, viz., telecommunica-n, has proved to be a necessity for fast and rapid wth of the country. One of the thrust areas for D activity identified by the Ministry of Communi-ion is Fibre Optics Technology. Fibre optics is ly to play a very important role in future not only communication system but also in other areas of tegic importance such as defence computer nces, and other emerging technologies.

n this paper authors have tried to assess the role ibre optics in different areas in different countries at present and in future A demand forecast for the system for India and the world has also been presented based on Technological Forecasting studies conducted by the authors.

Advantages

Due to many strategic factors inherent in this methodology, its continued rapid development is assured. The requirement of petroleum products in this system is low because of less plastic requirement due to smaller diameters of components. Other advantages include immunity from electromagnetic interference, light weight and small diameter of the components, elimination of ground loops and of cross-talks and low attenuation over long distance which reduces electronic amplification and gives improved performance. These fibres are secure against signal tapping or interception, have high temperature tolerance and large band width and low transmission loss.

Disadvantages

This system has some disadvantages too.

(i) It needs a higher order of skill and attention, periodic retraining of staff (maintenance crew) and sophisticated fault localization techniques.

(ii) Fibres are made of ultra-pure glass and must be protected and strengthened for rough installation and maintenance.

(iii) It requires more components than the conventional cable system.

(vi) The operating life of high power light sources has not been high enough to measure up to the MRBF standards required for communication service.

STATUS OF OPTICAL FIBRE COMMUNICATION (FOC) SYSTEMS

The countries which are making significant contributions to the development of FOC systems are UK, Japan, USA, Germany and France. According to Eloin, USA is currently ranked second in fibre optics technology and market position, the first being Japan. A survey of the state-of-art of the technology countrywise is presented below.

United States of America

After successful experimentation in Atlanta in 1976-77 over a 10.9 km repeaterless link with an operating rate of 44.7 Mb|s, which is equivalent to over 48,000 simultaneous telephone conversations, Bell Laboratories performed a field test in Chicago in 1977. This system operates at the rate of 44.7 Mb|s per fibre and has become part of the telephone network in that area.

Another demonstration of FOC system was provided in Long Beach, California, by GTE over a distance of 9.1 km. A 5.6 miles inter-office link between Long Beach and Artesia, CA, is working since 1977 at the rate of 1.5 Mb|s.

The first FOC system was installed on a permanent basis in Forte Wayne, Indiana. The system was developed by GTE Lenkurt Inc. and is serving more than 8,00,000 telephones.

Defence applications

Fibre optics is being designed into many new military systems. Programmes in which fibres are expected to play an important role include the MX missile, the B 1 bomber, the advanced Harrier aricraft, the control system for the ground and shiplaunched cruise missiles, and new submarines

The largest project is the MX missile with a requirement of 10,000 km fibre cable. The command, control and communication system for this project is being developed and tested by GTE Sylvania Inc's Strategic Systems Division in Needham, Mass, under a $ 325 million, five year contract for the Air Force. The B-1 bomber would possibly be the first aircraft with a fibre optics data base.

The other systems|organizations which have fibre optics systems are Army's AM||TYC-39 digital message switch, Air Force's tactical radio, Defence Intelligence Agency, National Security Agency, Naval Air System Command, Washington DC, Naval Under-Water Systems Centre, transmission of radio signals in California; defence communication system, Naval Research Laboratory, etc.

Computer

The single biggest mystery in the fibre optics industry is its scope in the computer market. Though many companies have focused their attention on this market, they could not get buyers. However, they still see the computer industry as a potentially lucrative fibre optics market.

Fibre optics is making inroads in this field at a rather slow rate. The first test of a fibre optics link between computers was conducted by the Bell System in an attempt to reduce the bit error rate and increase the capacity of data transmission between computers in April 1980 by Bell's New York Telephone Co. in Manhattan's financial district. Bit error rate in preliminary tests was better than about 1 in 10. The initial tests were conducted with five streams of 50 kb|s data multiplexed to 256 kb|s. A long term goal for transmission is 44.7 Mb|s. Expansion of the test system to 274 Mb|s is considered feasible technologically but not economically. This 4 km inter-computer link connects three computers at 50 Varick St. with three other computers at 375 Pearl St.

The fibre optics system at the Houston Main Library is being used to transmit data along five computer assisted data entry terminals (CADE). Another fibre-optics computer data link built by Hughes for the US government connects command centres to computers in separate buildings. This system allows sensitive information to be transmitted across insecure areas, as alarms are automatically triggered when there is an unauthorized attempt to obtain access to the link.

Other fields where FOC system is being applied are TV, civilian R&D, process control and distriouted network. It has also found some industrial applications.

United Kingdom

In Europe, Britain seems to be the most enthusiastic installer of FOC in telephone network.

A 140-Mb|s FOC system was successfully demonstrated by the Stafford Telecommunication Laboratories (STL) and Standard Telephone and Cables, both British companies of ITT. From this success, British Post Office (BPO) is confident that 140Mb|s optical fibre systems will become a major feature of telephone industry in the second half of the 1980's. There are already standing orders with STL for the supply and installation of optical fibre systems for the British Post Office. The 8 Mb|s system is for long distance trunk transmission circuits.

Canada

The world's highest data rate fibre telephone trunk system was completed in 1980 by the Canstar Communications Division of the Canada Wire and Cable Co. for a 3 km. link in the Trans-Canada telephone system in the Third Prairie province of Canada. The system operates at the rate of 274 Mb|s

The system is also being developed for military applications and computer-aided TV links.

Japan

Japan made fibre optics a national objective and has pursued aggressive programmes to develop the technology and to market it both inside the country and outside.

One of the important strategies is to integrate fibre optics into telecommunications, computers and other emerging technologies, such as VLSI, VHSIOC, new electro-optics materials, very high speed computers, and flexible software and hardware programming and other developing markets.

Governmental and social programmes, such as medical information and distribution network, nuclear community safety and communication programmes, optical visual information systems programmes, military defence systems, etc are the driving force in the rapid development and implementation of fibre optics in Japan

Japan appears to be leading the world's electrical utility market for fibre systems. In 1980, such systems in operation were supposed to measure around 54 km

Europe

The growth of telephone network in Western Europe has been rather slow Still many countries have begun to adopt fibre optics in telephone systems

In France, the future of fibre optics appears bright in the telecommunications market, but it is stronger in the broadband and video market. Half the market for 1980 was captured by the broadband only for the first stage installation of broadband fibre subscriber loops in the French resort of Biarritz.

Ireland has also finalised different plans to use fibre optics to modernize its telecommunication system

Other countries

Argentina has a contract with Nippon Electric Company of Japan to install a $ 100 million digital network in Buenos Aires which includes 320 km of fibre optics cable This project is part of a $ 2 5 billion programme to expand the country's telecommunications network by 1985. This network is said to be the world's largest digital network to be built in a single city and will include 80 km of fibre transmitting at 140 Mb/s and linking six exchanges These exchanges will connect 60 telephone offices through 240 km of fibre cable operating at 34 Mb/s.

OPTICS R&D

The fibre optics industry is moving so fast that in some areas it is hard to measure the speed of its growth. According to one estimate spending on fibre communications and R&D jumped from $ 100-200 million in 1980 to $ 300-400 million in 1981 throughout the world. The break-up of the expenditure according to different fields of application is estimated to be on the following pattern :

YEAR	1980 %	1981 %	1985 %	1990 %
Civilian R&D .	40 —45	30	16	6
Telephone .	15—20	35	44	59
Other telecom	5	2.5	—	—
Military	15—20	10	15	11
Computer .	10—12	—	6—11	8
Broadband	5—10	15	—	—

It is evident that there will be a sharp increase in the application of fibre optics in broadband and video fields, while the application in computer industry continues to be disappointing. The expenditure on civilian applications is expected to fall and that for applications in telephone is likely to increase.

Future of FOC system in India

On experimental basis, P&T Department's first trial FOC system was demonstrated in Pune in 1979 through linking of two local exchanges. The system capacity was 8 448 Mb/s Another demonstration was planned over a distance of 10 km. The capacity of this digital FOC system was about 34 368 Mb/s. These experiments will enable the design problems of the FOC system to be studied. The organizations engaged in research on FOC system include Telecommunications Research Centre, Delhi; IIT, Delhi; IIT, Karagpur; IIT, Bombay; IIT, Kanpur; IIT, Madras; Central Electronics Engineering Research Institute, Pilani , Central Scientific Instruments Organization, Chandigarh ; Central Glass & Ceramic Research Institute, Calcutta , Electronics Corporation of India Ltd , Hyderabad and Hindustan Cables Ltd., Hyderabad

While these efforts at indigenous development of the system are welcome, there is need for attention to perceived needs and available alternatives. Applications which should not be lost sight of include communication satellites, digital tele-system, radio telephone, solid state microwave system, wave digital radio, system X(UK), sunwind system, wireless telephone, optical voice/data link, laser, etc.

Demand forecast

In its report submitted in 1980, the panel on FOC systems constituted by the Electronics Commission has projected the requirement of this system in India for the next decade, on the basis of the total world

picture. The total world market and Indian market are estimated as follows :

Year	World* (US $ Million)	India** (US $ Million)
1985	21 500	236
1990	35 000	432

Source Electronics and Electronic Industries Association.
* Growth rate has been taken to be 10 6%
**Assumed growth rate is 13%

In another report, the world market and Indian market projections are given as follows :

Year	World* (USmillion)		India**(Rs. Million)	
	Pessimistic Estimate	Optimistic Estimate	Pessimistic Estimate	Optimistic Estimate
1985	440	659	14	27 5
1990	1 000	1770	94 6	135 4

*Source Gnostic Concepts Inc , USA.

These projections for India were made on the basis of collective judgement of the panel on FOC systems (a Delphi analysis), though the final validity depends on the actual realization of the various assumptions made.

Resources and R&D efforts in India

The important activities going on in different institutes in India are as follows :

(i) Manufacture of cables Hindustan Cables Ltd., Hyderabad.

(ii) Fibre drawing . Central Glass & Ceramic Research Institute, Calcutta; Central Scientific Instruments Organization, Chandigarh; and Hindustan Cables Ltd , Hyderabad.

(iii) Planning and System study : Telecommunications Research Centre, Delhi; IIT, Kanpur, Jadavpur University, Calcutta; and IIT, Delhi.

(iv) General R&D . Central Glass & Ceramic Research Institute, Calcutta; IIT, Kanpur, and Telecommunications Research Centre, Delhi.

(v) Fabrication, characterization and evaluation: IIT, Delhi; IRDE, Dehradun; IIT, Kharagpur, Central Scientific Instruments Organization, Chandigarh; and Tata Institute of Fundamental Research, Bombay.

Under a Rs. 11 lakh research and training project sponsored by the Defence Ministry, the Indian Institutes of Technology are working on the development of optical fibre communications system. The fabrication work and measurements are to be done by IIT Kharagpur; long haul system is to be developed by IIT, Kanpur, while IIT, Madras will undertake the designing work for the system.

For a country like India, the two most potent fields are telecommunication and mass communication The cost of the total system requirement for optical fibre transmission would be lower than that for the conventional copper cable transmission only in the case of 140 Mb|s system and above for long haul applications.

The Telecommunication Research Centre, New Delhi, has worked on systems engineering aspect of an overdesigned 8 Mb|s (120 telephone channels) system for junction traffic (short haul). The optical fibres used were imported (Japanese) graded index multimode silical fibres prepared by MCVD technique This junction traffic link will in future be expanded to a 34 Mb|s (480 telephone channels) system Future plans also include the development of 140 Mb|s (1920 telephone channels) junction traffic in some other route. For this, it has been planned that the transmitter would be a laser diode operating at 850 nm and the receiver would be APD Transmission would be digital using the PCM system. It would be relevant to point out in this context that a 140 Mb|s (6 km and 8 km, repeaterless routes) field trial conducted by British Post Office in 1977 using similar transmitting and receiving equipment operating at the same wavelength (850 nm) proved to be highly successful. Fibres used for this purpose were Corning (USA) graded index multimode silica fibres of transmission loss of about 4 5 dB|km and handwidth of about 160 MHz Cabling was performed by a British cabling company

Based on the above assessment, a programme of work has been formulated at the Central Glass & Ceramic Research Institute, Calcutta, to develop coated graded index multimode silica fibres operating at 850 nm, of transmission loss similar to that of Corning fibre, and handwidth of about 200 MHz

Summary

The paper reviews the growth of fibre optics technology and its applications in telecommunications, military operations, computer-aided TV, computer and other areas. A projection of future growth in India and elsewhere is made up to the year 1990. □

Rs. 292 crore for cleaning the Ganga

A DRAFT PROGRAMME of works at an estimated cost of Rs. 292 crore for cleaning the Ganga has been approved by the Government of India. Out of this the expenditure of Rs 240 crore would be made during the Seventh Plan period. The Central Ganga Authority has noted the seriousness of industrial pollution in specific locations and the State Pollution Control Boards have been asked to update information about the major polluting industries both in the public and the private sectors for concerted actions by the Centre and State Governments.

Social security for the poor's rescue

A PERSONAL ACCIDENT Insurance Special Security Scheme for the poor families, announced in 1985-86 budget and introduced from August 15, 1985, will cover all members of the poor families comprising household of landless labourers small farmers, traditional craftsmen, etc. whose total family income from all sources, does not exceed Rs. 5,000 Per annum and who meet fatal accidents occurring in the specified districts.' The surviver benefit under the scheme is Rs. 3,000 payable to the surviving spouse/dependent children/surviving dependent parents.

The scheme is intended to provide a surviver benefit cushion for the poor families affected by the accidental death of its earning member who is not covered for the compensation under any insurance scheme or any law/statute. In the first phase, the scheme was introduced to cover 78 districts in the country with effect from August 15, 1985. The names of the districts which have been covered, in the second phase, are Maharashtra (Raigad, Ratnagiri, Dhule, Satara, Osmanabad, Beed, Galchiroli, Bhandara and Yeotmal), Haryana (Mohindergarh & Hissar) and Assam (Kokrajhar & Naogaon) with effect from October 2, 1985.

The scheme will be extended in the third phase to the residual States of Tamil Nadu, Tripura and Nagaland so as to cover the remaining 9 districts in the country as soon as their recommendations in this behalf are received.

The scheme is being administered by the Union Ministry of Finance, Insurance Division, through the General Insurance Corporation of India and its four subsidiaries, viz., National Insurance Co. Ltd., New India Assurance Co. Ltd., Oriental Insurance Co. Ltd. and United India Insurance Co. Ltd.

The entire insurance premium payable for the Scheme will be borne by the Central Government.□

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Rural electrification exceeds target

AS MANY AS 19,043 villages were electrified by the Rural Electrification Corporation during 1984-85 exceeding the target by 11 per cent. Similarly 3,35,217 irrigation pumpsets were energised against the target of 2,48,270 pumpsets. This was the first time that the number of energised pumpsets crossed the 3 lakh mark during a single year, representing a lead of over 20 per cent over the previous year. There was a significant all-round increase in the operations of the REC when it approved 1,802 projects involving financial assistance of about Rs. 515 corore—the highest amount of financial assistance sanctioned during any year so far. The Corporation earned a net profit of Rs. 13.32 crore during 1984-85 as against Rs. 12.21 crore during the previous year.

The targets of both village electrification and pumpsets energisation were exceeded for the second successive year; 87 per cent of the total villages electrified and 84 per cent of the total pumpsets energised in the country during the year were under projects of the REC. The total financial assistance sanctioned by the Corporation had crossed Rs. 3,035 crore mark by the end of the year. As on the 31st March, 1985, 9803 projects were approved envisaging electrification of 2,85,276 villages and energisation of 27,38,499 irrigation pumpsets. More than 1.70 lakh villages were covered and nearly 18 lakh pumpsets energised up to the end of the year under REC projects. This amounts to achievement of 57 per cent of the target of villages and 60 per cent of pumpsets energisation under the phased programmes.

The REC continues to give priority to under-developed and backward areas for financial assistance. The Corporation sanctioned Rs. 282.69 crore for 731 schemes under the backward and specially under-developed areas, providing for coverage of 24,551 villages and energisation of 28,980 pumpsets in the project areas. Of the total financial assistance sanctioned during the year, 64 per cent was meant for the States that are below the all India average in the field of rural electrification.

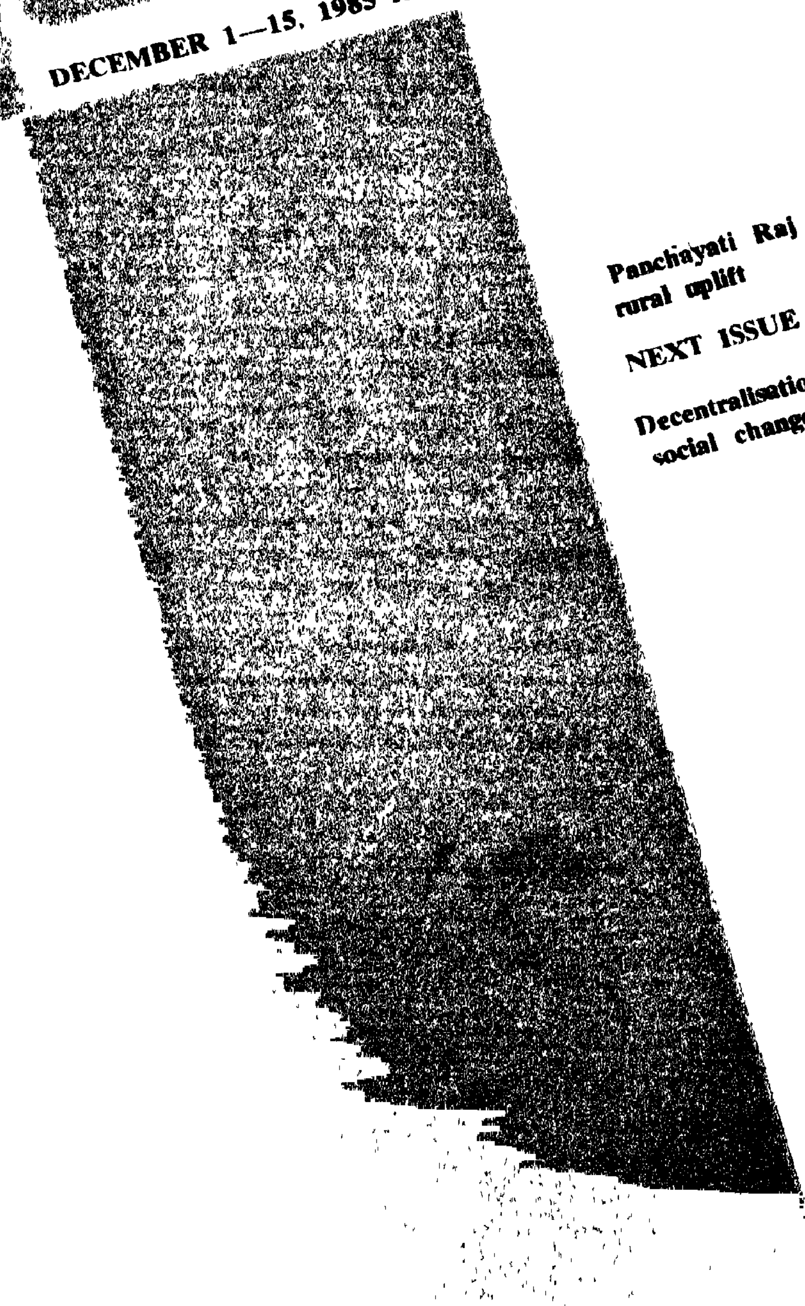
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Focus on industrial relations

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Panchayati Raj and rural uplift

NEXT ISSUE

Decentralisation and social change

Raising land productivity in next two decades

THE CHALLENGE to meet the growing demand for food, fodder and fuelwood with diminished per capita availability of land can be faced only if there is quantum jump in land productivity.

By the year A.D. 2000 India is expected to support a population of 1000 million and also to provide a better standard of living. No amount of fertilizer, water, high-yielding varieties, machinery and equipment and other social mechanisms for credit and marketing can help achieve higher production, larger income and fuller employment opportunities unless land resources are carefully conserved and developed.

Available estimates indicate that currently about 175 million hectares or 53 per cent of the country's land mass is subject to soil erosion and land degradation. There is an alarming prospect of losing almost 1/3 of arable land in the next 20 years. The major objective of landuse planning, therefore, is to contain degradation of land on one hand and improve its productivity and population supporting capacity on the other.

Factors contributing to soil erosion, salinity, alkalinity, waterlogging, desertification and water pollution need to be carefully examined to find cost effective solution. Also the potential damage to soil structure through excessive use of chemical fertilizers should be carefully studied.

Water management practices and cropping patterns must be examined in depth to optimise returns and the vital role of afforestation in enhancing soil productivity and preservation of ecological balance must receive systematic attention.

In all these exercises, the country has to make effective use of all advances in modern science and technology to expand substantial production frontiers. ☐

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Better industrial relations, better productivity

Sipra Mukhopadhyay

To raise productivity, especially in manufacturing sector, creation of cordial relations between the employers and the trade unions is of utmost importance. Without this the author says, it will be unrealistic to assume smooth and efficient production activity. For this, the author feels the government, the management, the trade unions and the workers should first inculcate a feeling for country's welfare and make concerted efforts to ensure more production and better productivity.

ONE OF THE main plan objectives is "step up in the rate of growth of the economy, the promotion of efficiency in the use of resources and improved productivity". Productivity as a whole implies getting maximum out of man, method and machine employed in all sectors in best possible quantity and quality. Here our emphasis is more on the participation of trade unions for the betterment of productivity and our main concern centres round the industrial productivity where organised labour union plays a vital role in various ways. Taking as granted in the market like India, where there would be no shortages of demand or the total sale would be that much sufficient to dispose of the total products at the reasonably predetermined prices. Our country has followed a mixed economic system, where importance is equally attached to all industries belonging to private, joint or public sector. We can look for the first achievement in production.

Our attention boils down to the industrial production where we are seeking the best co-operation of trade unions, so as to revitalise our production units with the help of working people. On the producer side it is noticeable that a good and established industry has become a sick one, and a new industry faces difficulties in achieving its target level of production. Again producers are scared of investing in certain parts of the country and their constant complaint is lodged against the present labour class and aggressive trade union activities. On the other hand, the trade unions are challenging the power of the producer and when their aggressive activities fail to draw the attention of the producer they try to take shelter under the Government so that the latter can take over the units. Why is it so?

Problem of production

If we go deep into the problem we can see that production is carried out by men. "It is their satisfaction and love for work which can produce better results." To go a little further it is not the work force alone who are responsible but management is also equally responsible for their indifference in the time of need arising out of precarious conditions. When they realise it, perhaps it is too late. This belated realisation brings frustration and manifests into strikes, closures and lock-outs.

This results in the loss of many man-days. The relevant data shows that from the peak level 43.85 in 1979 it came down to 21.93 million in 1980-81 but again it shows a higher trend afterward. If we include textile strike (12.26 million) the highest peak we can get in 1982-83. In 1983 the man-days lost was more also due to the strike in jute industries and coal mining. Some unaccountable losses are always there in many of the big industries due to go slow observations.

The man-days lost due to strike and lock outs in the central sector can be seen in the following table

TABLE 1
Man-days Lost

Year	No of strikes	Man-days lost (in millions)	No of lockouts	Man-days lost (in millions)	Total man-days lost (in millions)
1979	2703	35.80	340	8.05	43.85
1980	2501	12.02	355	9.91	21.93
1981**	2245	21.21	344	15.38	36.58
1982*	1970*	10.71*	454	22.50	33.21**
1983*	1936*	10.55*	495	21.09	33.48
1984*	1542		342		30.82

*Provisional

**Excluding Textile strike (41.40—1982) (13.38—1983)

Source. Ministry of Labour

Up to 1981 the man-days lost due to strike is much more than it is due to lock-outs which means Trade Unions were successful in their game and since lock outs were less it had not resulted in a net loss that could have been otherwise seen. But 1982 onwards reverse trend can be seen. 1982 onwards the man-days lost due to lock-outs is almost double the man-days lost due to strikes. Here we are not including the textile strike as we know for textile strike the man-days lost was affected both by strikes and lock-outs. We know that strikes are followed by the trade union and lock-outs are applied by the management where the situation goes out of control. So lock-outs is the break event point but lock-out is also the result of prolonged strike taken by trade unions.

Loss of production due to strikes

The state-wise figures for strikes and lock outs can be seen in table No 2 for the years between 1981 and 1984.

TABLE 2
Man-days lost due to strikes and lock outs

(in lakhs)

States	1981 S	1981 L	1981 T	1982 S	1982 L	1982 T	1983 S	1983 L	1983 T	1984(P) S	1984(P) L	1984(P) T
Andhra Pradesh	38.5	5.1	43.6	14.5	5.6	20.1	7.4	1.9	9.3	10.3	5.1	15.4
Bihar	12.8	2.4	15.2	5.1	9.1	14.2	5.8	9.9	15.7	3.6	7.8	11.4
Gujarat	3.4	3.2	6.6	3.5	4.9	8.4	2.9	4.9	7.8	6.3	1.8	8.1
Haryana	4.1	0.4	4.5	1.5	0.2	1.7	3.5	4.4	7.9	6.8	3.0	9.8
Karnataka	32.1	13.2	45.3	3.6	0.4	4.0	4.8	1.0	5.8	4.9	0.1	5.0
Kerala	10.7	12.6	23.3	12.9	10.6	23.5	8.2	4.4	12.6	5.0	0.2	5.2
M P	14.1	0.1	14.2	2.7	0.4	3.1	5.3	3.6	8.9	5.6	5.3	10.9
Maharashtra	29.0	11.9	40.9	26.0	12.7	38.7	19.2	17.7	36.9	29.7	26.9	56.6
Orissa	3.1	0.4	3.5	1.1	0.7	1.8	0.8	2.8	3.6	0.5		0.5
Punjab	0.6	0.2	0.8	4.9	14.4	19.3	1.9	0.2	2.1	0.13		0.13
Rajasthan	6.6	1.7	8.3	2.9	1.3	4.2	6.1	1.7	7.8	5.5	1.1	6.6
Tamil Nadu	30.0	11.6	41.6	15.5	4.5	20.0	17.4	4.8	22.2	34.9	3.9	38.8
U P	8.2	6.5	14.7	3.6	2.8	6.4	3.6	1.6	5.2	3.4	0.8	4.2
W Bengal	11.3	85.1	96.4	5.3	156.0	161.3	15.3	150.3	165.6	20.0	66.3	86.3
Others & UTS	7.6	0.4	8.0	4.0	1.4	5.4	3.3	1.7	5.0	2.7	1.9	4.6
All India	212.1	154.8	366.9	107.1	225.0	332.1	105.5	210.9	316.4	139.3	124.2	263.5

*Excluding Bombay Textile Strike, S—Strikes, L—Lock outs, T—Total, P—Provisional, – nil or neg

Source. Labour Bureau, Simla

From Table 2 the total number of strikes and lock outs is highest in West Bengal in all the periods and it has an increasing trend upto 1983-84. Only 1984 was marked by marginal decline but for 1984 data is not complete. In 1981 strikes was highest in Andhra Pradesh and then comes Karnataka and Maharashtra. Strikes were only 11.3 in 1981 in West Bengal but the number of lock-outs in West Bengal stood at 85.1 which is almost 55 per cent of the total India's figure. So man-days lost was in West Bengal due to lock-outs which implies that trade unions were very strong to compel the investor to close the units. The other interpretation can be the investors were incapable as sometimes reluctant to solve the problems rather they preferred to shift to some other region. In 1982 strike was higher in Maharashtra than Tamil Nadu, Andhra Pradesh and Karnataka. It was negligible in West Bengal. But the number of lock-outs is much more in West Bengal. It is even higher than the previous period, 156 in 1982 i.e. 69 per cent of the total events. In 1983 strike is highest in Maharashtra then comes

Tamil Nadu and West Bengal. For Maharashtra lock out was increasing which means Trade Union had the upper hand. In West Bengal closure of unit was a common phenomenon and was followed by Maharashtra. In 1984 again the lock outs is highest in West Bengal but it shows a marginal decrease from the previous period. But the percentage share of the total is 71 per cent. When most of the states experienced a decline or same rate of events West Bengal, Tamil Nadu and Haryana were experiencing higher trend in the event. Here data excluded the Bombay Textile Strike so the data for Maharashtra is under estimated.

Highest mandays lost

Throughout the period 1978 to 1983 the percentage man-days lost is highest in manufacturing sector. There is a slight decline in 1980 from the previous peak of 1979 but thereafter it maintained a steady percentage rate. In agricultural, hunting and forestry and fishing sectors man-days lost was quite high in the years between 1980 to 1982 but it came down in 1983. Man-days lost in mining and quarrying sector maintained a steady rate and that reached the peak in 1983. For other sectors man-days lost either remained the same or came down. So if we can reduce the man-days in manufacturing sector we can achieve more. The growth rate of industrial production stood at 5 per cent in 1983-84 and it is expected that it will reach 7 per cent during 1984-85 (final data is still not available). There is a substantial improvement in industrial relations. Even then the jute strike in West Bengal and port strike affected the economy quite hard. The Industrial Disputes Act of 1982 and 1984 came into effect since the middle of August 1984. Lot of amendments have been made to increase the efficiency and to improve the condition of both employer and workmen. Still we find the number of sick industry is increasing. Even when steps are being taken to improve the industrial relation in the industry, be it small or big is lacking congenial atmosphere in achieving target level of production mainly due to the existence of different groups of strong labour unions. As a matter of fact, bad industrial relations exist to a considerable extent in states like Maharashtra, West Bengal and Gujarat. The past continuous strike by cotton textile workers and the jute workers point towards this fact.

Trade Unions and productivity

Trade Unions are elected bodies of the employees of individuals industries. There are also one or more unions recognised by the management and they help the workmen at large for settlement of matters relating to disputes with the management without passing any problem to the production. In case of difference both the parties can refer or approach the Government authority for an amicable settlement. If it fails, the matter can be referred to arbitration or adjudication. At present there are trade unions, trained management personnel, efficient Government machineries to settle all the problems satisfactorily. Despite the existence of such elaborate conciliation mechanism the question remains why are there so many stoppages, closures and sickness of factories resulting in enormous loss of production ?

In an atmosphere of give and take there will be some mistrust among the parties whether that is between the workmen and management or management and trade unions.

"TRUST—This five-lettered little word is a very sacred word in all spheres of life. To earn the trust one has to be honest, ready to sacrifice and to be vigilant, to guard it at all times."

With the growth of the industry large number of people were engaged in industry mainly through contract labour system and partly by selection by the management. The conditions of work, job security, wage policy etc. were not there, causing dissatisfaction amongst the working people and led to much suffering and frustration. There are, however, some legislation for mitigation of the sufferings of the working people but these were mostly utilised in favour of the industry and seldom could any worker get help from the court of law. Again every union prepares its charter of demands and gets them settled for a period of two to five years but before expiry of the earlier settlement they submit their new charter of demands. In this chain process nobody can expect a peaceful atmosphere to prevail at by all time. In true sense, trade unions are not the only bargaining institutions, they are also not the bodies to support workmen even when they are doing something wrong. Actually in most of the cases different trade unions belong to different political parties. As a result, the confrontation between the trade unions extends to the point of confrontation among the political leaders of the country. On the other hand, entrepreneurs are generally reluctant to share their gain with the workers. In the extreme, they think trade unions are their first enemies. It is, therefore, of utmost importance to create necessary atmosphere where both employers and trade unions can function peacefully and see the problem of workers in detail, and sympathetically. If production increases both workers and entrepreneurs will be benefited. Trade unions are expected to look into the policy of the management and if anything goes against the interest of the workmen they should come forward to help the management to proceed peacefully. The management can also discuss the matters with the trade unions leaders and try to arrive at some sort of understanding at an early stage to avoid any problem. So both the parties should aim at increasing production and with the mutual co-operation it can be achieved. Without co-operation from both the parties it would be unrealistic to assume that production activity

will be carried out smoothly and efficiently. Trade union groups should also feel that they are not being ignored by the employer or by the Government. And management should realise that trade unions are not their enemies but their agents through which more production can be achieved. This will generate a feeling among the workers that they are not only protected by the trade unions but also by the management. So it is necessary to develop atmosphere where all the parties can exist peacefully. Usually labourers and trade unions know that management will not concede their demand unless there is a hard discussion or threat of strike and they also know very well that the quantum of bonus will be decided on the basis of the bargaining power of the trade unions. So noise and confrontation have become a common phenomenon before each and every festival and therefore, there is a scope for taking action to avoid such undesirable situations Government may work out some feasible formula for incentive bonus and can make it obligatory on the part of the management to agree The formula will certainly be based upon the production criteria. If this is implemented with sincerity better productivity can be achieved

Put an end to strikes !

It is high time we thought to stop strikes and lock outs not by compulsion but through some other means. Industrial un-rest, stoppages of work, lock-outs in factories and other difficulties to run the industrial units made the management and Government even in the advanced countries to think and to make proficient effort, better service conditions and legislation for the benefit of all. We have also to take the same attitude. The welfare activities of trade unions is much lacking in our country Similar activities can also be taken by the management side. This can increase satisfaction of the workers.

At the end, the labourers should also think about their own interest. Strikes and lock outs generally result into tremendous loss both in monetary and physical terms They should, therefore, bear in mind the consequences of such actions.

TABLE 3
No. of workers retrenched
(1983-84)

Year	Workers Retrenched
1980 (P) .	15341
1981 (P) .	17320
1982 (P) .	15922
1983 (P) .	20376
1984 (P) .	9985

From Table No. 3 we can see that retrenchment is highest in 1983 and there is a decline in 1984. Sector-wise retrenchment can be seen in Table 4.

TABLE 4
Sector-wise retrenchment

	% of retrenchment
Engineering .	24
Construction .	21
Land Transport	5.7
Mining	6.2
Textile	6 3
Others .	36 8
	100

The highest retrenchment is in engineering sector (24 per cent) and then comes the construction (21 per cent).

In a country like India where unemployment problem has assumed an alarming dimension, industrial production could not achieve the desired level. Such type of industrial unrest might lead to further unemployment and frustration "We should create an atmosphere where we can mutually 'trust' each other. Actually the moral of this very good word seems to have vanished in the present atmosphere of dishonesty."

In conclusion, in a planned economy like India these strained industrial relations will be a damper to our fast economic development, unless we can ensure congenial atmosphere for increased production in all sectors of the economy. This task can only be accomplished when the Government, the management, the trade unions and the workers have a feeling for country's development and make joint efforts to fulfil the objective □

Coal Preparation Engineering Institute at Ranchi

The Union Department of Coal has decided to set up a Coal Preparation Engineering Institute (CPEI) with the Soviet assistance at Ranchi.

This is in pursuance of the recommendation of an expert group on coal-extraction, transport and utilisation. The institute will have strong research, development and engineering facilities.

The major functions of the institute will include perspective planning and preparation of advance action plans for setting up of coal washeries, analysis and interpretation of technologies and data on coal washeries, standardisation of equipment and preparation of techno-economic feasibility and project reports. It will also undertake research and development work in the field of coal washeries and impart training to the concerned personnel.

On better participation of workers in management

H.D. Majumdar

In this article, the author surveys the implementation of the scheme for workers' participation in management of industrial units. He enumerates the loopholes inflicting the schemes and suggests correctives to make it viable and meaningful.

DURING THE POST independence period, the greatest invincible enemy of the prevailing socio-economic supra-system is 'Poverty'. This terrific enemy can be vanquished if we do follow the basic tenet of society itself, that is 'United We Stand, Divided We Fall'. The entire working population shal have to fight out this dreadful enemy and must continue this fight until it (poverty) is crushed This fight, in the economic front, is inherent in achieving optimum production by way of increase in productivity of all inputs Optimum production and higher rate of prdductivity can never be increased without the wholehearted co-operation of the human elements directly or indirectly involved in productive activities This is the greater context of the worker's participation in management.

Why participation ?

As a matter of fact, it is a mutual cooperation between the managers and the workers This is even true in agricultural and other sectors of our economy Hence, the Workers' participation in the management must be viewed on this vital national perspective. Equal emphasis must be laid on both equitable distribution of national wealth produced as a result of cooperative endeavour of the human elements of the work situation and severe control of population growth. Even the maximisation of output and question thereof comes up first of all and herein lies the relevance of workers' participation.

The Government of India, for consistent reasons, has been attributing immense weight on participative management. With a view to increasing production by way of increase in productivity. It is worthwhile to mention that a man (human machine) cannot work wholeheartedly unless some of his basic needs are adequately satisfied. 'Oneness of spirit' or 'sense of belonging' or both, do not appear in the ageold frozen minds of the workers automatically. If the workers view points in the form of concrete suggestions in the management of an enterprise is given due weight as well as recognition through its proper implementation, they begin to feel the crucial significance of the vital roles they have been playing and thus, step by step, they would involve themselves with good or bad of an undertaking 'Industrial Democracy', higher productivity and 'Justice for the workers' etc are positively interlocked with workers' share in the management. This joint venture, if allowed to continue further, brings forth a sort of self-government or self-management in an industrial context which the workers did not experience eariler. Ipso-facto they are sure to have the real taste of democracy via decentralisation of power provided that the scheme is implemented in the right direction.

How the scheme evolved ?

Our constitution of late provides directive for this scheme. under Article 43(A). Industrial Policy Resolution (1965) has rightly emphasised its significance by recognizing its inevitability We have gained some experience by now on this co-management system, based on human aspects of productivity. 'Greater mutual understanding' between the capital and labour was immensely felt in depth during the second world war. In 1942, Indian Labour Conference (hereinafter referred to as ILC) came into existence following the tri-

partitism of the I.L.O. The ILC consists of the representatives of the employers, workers and the government and, as it stands now, is the apex body in influencing the matters pertaining to capital and labour. Considerating the 'nations first approach'. Industrial Disputes Act, 1947 came into existence for the prevention and settlement of industrial disputes. And for the administration of this vital enactment there have been some authorities of which 'Works Committee', being one of them. It is to be borne in mind in this context that the 'Works Committee' is only the statutory step towards participative management. Despite its latent defects it had been a bold step.

Works Committee has to embrace its unnatural death in almost all undertakings, because of the traditional attitude or outlook of the parties concerned. Perhaps the management side—at least, a greater segment of it had never accepted the introduction of Works Committee. There might have been numerous reasons for its failure but mentionable is one that lies in the callousness in a sizeable section of the management people who have formed a peculiar habit of belittling the potentiality of the working class. Further for violation of the decisions of the works committee, none is punished. However, the Planning Commission has rightly sought to make it a permanent feature of industrial life. In 1971 it was decided that workers representatives should be there in the Board of Directors. Though it was primarily earmarked for the public sector, yet it was also a de facto recognition of the workers' capability and potentiality. It is true that there lies a scope of public debate on as to how the representatives of the parties concerned to be chosen It is also true that the party in power may misuse this power in gross violation of the norms of democracy by having their own men in the Board of Directors only on political consideration Still it is 'one step forward'. By 1973, it was extended to the Nationalised Banks In 1975 Government of India declared a 2-tier system under its first 20-point economic programme Nevertheless, it did not work up to our expectation.

Loopholes in the Scheme

If we critically make an analysis of the different forums of the existing scheme some defects in the form of barriers naturally come in the way of its proper execution.

— Both the parties of industrial relations have not accepted this remarkable scheme wholeheartedly. According to the dominating section of the managers "Management function" is the prerogative of the Managers themselves

— On the contrary, it is not well-understood by the majority of the workers as some Trade Union circles feel that the workers have got no "meaningful role" to play in framing policies. It is according to them, more related to "more production" and limited to only labour productivity as well.

Further, an enlightened section of the working class, look at this scheme with great suspicion and anxiety.

— Workers, a section in particular, take it up as a "mere concession" as it is not linked upto all types of work at all levels of decision making.

— On the contrary, a section of the managers feel that it has been imposed on them by virtue of government directives. They just follow the government notification half-heartedly by sending manufactured reports thereon. Fired with this kind of apathetic attitude, they have been highly mechanical in their modus operendi.

— "In the management of an industry this comanagement system has a paternal affection" —which is often ignored by both the parties. As a result, the forum of participative arrangement often turns into a mechanism for collective bargaining.

— Even after acceptance, controversy will still be there on the selection of representatives. 'Inter' and 'intra union' rivalries, as great hindrance come in the way.

— Aims and objectives, structure and functions of the existing system to many, are not that way clear and understandable.

— The discussions are more mechanical and/or circular oriented. Mutual trusts based on mutual appreciation and mutual cooperation which are the pillars of harmonius industrial relations are almost absent. All the time, an artificial distance or gap is maintained and some times promoted and that too experienced in minor matters. So-called status mentality should go.

A few successes

This system is not altogether a failure. The organisations which have been able to absorb the essence of human relations approach, have shown better results. A few private sectors and some key public sector undertakings have done mentionable progress.

At least on 30-12-1983, Government of India, declared an improved scheme. This is a three-tier system (1) Shop-level (2) Plant level and (3) Board level.

In respect of levels, it is a great jump. This functions of the plant level has considerably expanded. This has been divided into some Areas. (i) Operational area (ii) Economic and Financial Area, (iii)

Personnel Area, (iv) Welfare area, and (v) Environmental area. The workers' representatives in the Board level are supposed to handle all matters involving all these areas. We are yet to gather experience on this vital step.

How to improve it ?

— A favourable environment conducive to development of a sense of ownership or belonging is a pre-requisite for its success and the Management should have to play the pivotal role in creating such an environment.

— 'Ownership mentality' of a section of managers (who believe in theory) should go and this mentality should be turned into 'Partnership mentality' for which adequate as well as intensive training programme must be preplanned. A law on participative Management giving stress on training aspects can be thought of by the law-making body.

  Meanwhile a circular emphasizing on joint training of both Management and workers may be issued by the Central Government.

— The workers should rapidly equip themselves so that they can enhance their level of knowledge and status and ultimately can come to an equal footing with their respective employers. With this view in mind the Central Board for Workers' Education has developed a one-month leadership development Course. This bold initiative is most welcome, but, this course should have some sort of attachment programme to understand and appreciate the oppositions' view points. The Trade Unions should avail themselves of this valuable opportunity. The management should extend necessary facilities for such training as it benefits them all.

— On the very basis of mutual rights and obligations, mutual trusts and understandings is bound to develop. It is true that mutual understandings and appreciation leads to concreate collective decisions for the interests of all.

— Decisions once taken on the basis of consensus, should be honoured by the parties to the decisions. They are to execute their decisions in their respective field of duties in right earnest. If the mutual understanding is fair and real, execution of the decisions is not a problem at all.

— Workers, being the citizens of the country, are the de facto partners of the enterprise, in the context of "Nation first approach" and that is why, they should be given due prestige honour and respect. The Managers in their day to day conduct shall reflect this important phenomenon of industrial life.

— Co-education needed : For this purpose co-education of the representatives of the workers and the Management is of paramount importance. This short-term joint course may remove the artificial distance and barriers between them.

— The Government must be vigilant, but this vigil should not in any way strike at the very root of industrial democracy. The government must guide the parties considering the interest of the nation.

— Efforts should be made to this participation a democratic one.

— Industrial Disputes Act, 47 should be amended providing more powers for the works committee, prescribing penal measures for violation thereof. The language of the scheme should be easy and understandable. □

Universal immunisation Programme Launched

The Union Ministry of Health and Family Welfare has selected 30 districts and catchment areas of 50 medical colleges for providing universal immunisation services during 1985-86. All the districts in the country will be covered by 1990.

The Government of India has accorded a very high priority to programmes aimed at improving the health status of mothers and children. 'Universal Immunization' of expectant mothers and children is an important component of Central plans to enhance Child Survival Rate. The programme commenced with effect from November, 19, 1985

At the national level, Prime Minister would be reviewing the programme performance every month. At the state level, the monthly programme performances would be reviewed on a regular basis by the Health Minister and the required reports sent to the Centre.

The Government has already provided additional inputs in the form of additional staff, vaccines, equipments for storage, transportation of vaccine etc. Vehicles have also been sanctioned to improve mobility for outreach operations and supervisory visits. The entire expenditure is being met by the Central Government. □

Panchayati Raj for faster rural uplift

Sita Ram Singh

The role of Panchayati Raj is sine qua non for effective implementation of anti-poverty programmes at the grassroot level. The Government has reiterated the importance of Panchayati Raj in rural development in the recently recast Integrated Rural Development Programme (IRDP). The author calls for strengthening of Panchayati Raj to ensure accrual of benefit of economic planning and poverty alleviation measures to the poorest of the poor in remotest areas.

FROM TIME IMMEMORIAL, people in rural India have lived as a community on the basis of self-sufficiency and managed their affairs through the self-governing institution of 'panchayat' or village council. At present, nearly 80 per cent of Indian population lives in villages. The British rulers by their ruthless method of revenue collection through Zamindari & Ryotwari land tenure system, and deliberate policy to destroy cottage industries, almost ruined village corporate life in India. However, realising their usefulness, attempts were made to revive the panchayats after Montague Chelmsford Reforms (1919). While pioneering the movement for attainment of 'sawaraj' in 1920, Mahatma Gandhi strongly advocated for a 'constructive programme' which aimed at moral and material welfare of the villagers through elected panchayats. The popular ministries, on assumption of office in various provinces in 1936, enacted legislations to revive village panchayats, but the result was not very significant as the British Government was not very serious about rural welfare and public spirited persons were more interested in attaining 'swaraj' than rural welfare as such.

The institution of panchayat was keenly debated in the Constituent Assembly and Article 40 was embodied in the Constitution of India obligating that, "The State shall take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government."

Panchayat in rural welfare

Soon after attaining independence, the Congress Government under the leadership of Jawaharlal Nehru, the Chief Architect of Planning in modern India, embarked on a systematic programme of development of the country through Five Year Plans. Emphasizing the role of panchayats in rural areas, the First Five Year Plan (1951—56) stated that, "so long as self-governing institutions are not conceived as part of the same organic constitutional and administrative framework, the structure of democratic government will remain incomplete."

Community development

A massive Community Development Programme, covering all aspects of rural life, was inaugurated by Jawaharlal Nehru on October 2, 1952. Therefore, on the recommendations of Grow More Food Committee (1952), National Extension Service was introduced on October 2, 1953, throughout India for assisting the process of development planning. These programmes took steps to ensure people's participation by organising non-statutory committees at the village and block levels. Though the advantage of new farm technologies and high yielding variety of seeds mainly went to better off farmers, which ultimately helped usher in Green Revolution in the country, the harijans, the tribals and the landless poor also managed to forge ahead.

A Revised Community Development Programme 'as started in the middle of 1958, on the recommenations of Balwant Rai Mehta Committee (1957) which as appointed to look into the functioning of various lan projects, including Community Development 'rogramme and National Extension Services, and to uggest measures for maximum economy and efficiency i their implementation. By the end of 1982, Comunity Development Projects serviced 366,850 villaes with a total population of 471 million. A block onstitutes the primary unit for planning and execuion of the development programmes, and the entire ural India has been divided into 5223 blocks. There s a development Commissioner in charge of Community Development Programme in every State and the administrative set up in districts consists of a Block Development Officer and 8 Extension Officers, who are experts in agriculture, cooperation, animal husbandry, cottage industries, rural engineering public health, panchayat and social education. At village level, 10 Gram sevaks and 2 Gram Sevikas in each block act as a multi-purpose extension agents.

Democratic decentralisation

In its monumental recommendation, the Mehta Committee recommended for democratic decentralisation of administrative machinery at the village, the block and the district level by formation of Village Panchayats, Panchayat Samitis and Zilla Parishads at the respective levels, to enable the people to participate actively in the planning and implementation of development programmes. The Report was discussed in Parliament and thereafter the National Development Council accepted the recommendation about establishment of three-tier system. For evoking popular appeal, the name of 'democratic decentralisation' was replaced by 'Panchayati Raj'. The States were given option to adopt it with such modification as suited their special conditions, which resulted in lack of uniformity in its implementation.

Rajasthan and Andhra Pradesh were the first to implement Panchayati Raj. Its inauguration in Rajasthan was done by (Pandit) Jawaharlal Nehru on Mahatma Gandhi's birthday on October 2, 1959. Panchayati Raj has now been established in all the States and Union Territories except the States of Meghalaya and Nagaland and Union Territories of Lakshdweep and Mizoram, though some States follow two-tier system and some even one-tier system. As on March 31, 1984 there were 2,17,319 Gram Panchayats covering 5,61,175 villages and about 95 per cent of the rural population, 4526 Panchayat Samitis and 297 Zilla Parishads.

The Second Five Year Plan recommended the structuring of local government and development of administration at the district level on democratic lines with the village panchayat organically linked to higher tiers. In the words of Third Five Year Plan (1961—66), Panchayati Raj implies the "development of a lot of interconnected democratic popular institutions at the village, block and district levels in which the representatives of the people in Panchayats, Samitis and Zilla Parishads and Cooperative Organisations function with the support and assistance of the various development agencies of Government working as a team." The primary object of Panchayati Raj is "to enable the people of each area to achieve intensive and continuous development in the interest of the entire population. Thus Panchayati Raj seeks to create a Government of the people, for the people and by the people.

Format of Panchayati Raj

The whole edifice of Panchayati Raj is built on the foundation of *Gram Sabha*, which is the General Body consisting of all the adult population residing in the jurisdiction of a Gram Panchayat, extending over one village or a group of villages, with an average population of 1500 and an average area of about six square miles. In some States Gram Sabha is statutory and in others non-statutory. The statutes provide that the Gram Sabha should hold at least two meetings in a year. The functions allotted to Gram Sabha are consideration of annual statement of accounts, audit report and administration report of Gram Panchayat, work programme for the ensuing year, taxation proposals and any other development schemes. Gram Sabha thus makes for direct democracy at the basic community level. However, many surveys conducted in States have indicated that the Gram Sabhas are not meeting as scheduled and are hence not quite effective.

Gram Panchayat is the first tier of Panchayati Raj. It is Gram Sabha's executive body. Its membership varies from 5 to 31. Panches are elected through secret ballot in all the States, except J&K. There is system of both direct and indirect election of Sarpanch. The Gram Panchayats have been entrusted with a wide range of activities covering rural development and welfare of villages. These include promotion of agriculture and rural industries, provision for sanitation, medical relief and child welfare, maintenance of common grazing grounds, village roads, tanks and wells. In some places, they also look after primary education, maintenance of village records and collection of land revenue. The Gram Panchayat elects representatives to the Panchayat Samiti and is responsible for implementation of development programmes at village level.

Panchayat Samiti forms the *middle tier* of Panchayati Raj and is constituted by members elected by the panches in the block, one member elected by each municipality in the block, a stipulated number of representatives of scheduled castes, scheduled tribes and women, directors of cooperative institutions and local residents with experience in public life and rural development. The Samiti is called by different names

in States, such as, 'Janpad Panchayat' in Madhya Pradesh, 'Taluka Panchayat' in Gujarat, and 'Kshetra Samiti' in Uttar Pradesh. The elected head of Samiti is differently known as President, Chairman, Pradhan or Pramukh. The Samitis are supposed to be responsible for development programme at block level.

Zila Parishad is the top tier of Panchayati Raj. It generally comprises (1) Presidents of Panchayat Samitis (ex-officio), (2) Local MPs, MLAs and MLCs (with or without the right to vote), (3) persons representing women, scheduled castes, and scheduled tribes who are co-opted, and whose membership is reserved, (4) representatives of co-operative societies, municipalities, etc. The District Collector is the Government representative. The directly or indirectly elected Head of Zilla Parishad is termed as Chairman, President, Adhyaksha or Pramukh. The term of Zilla Parishad varies from 3 to 5 years in different States. By the association of MPs, MLAs and MLCs, the Zilla Parishad is able to maintain link with the State and Centre level policy making bodies.

Third Five Year Plan

The Third Five Year Plan (1961—66) laid down the following tests to measure the success of Panchayati Raj:

(1) The extent of agricultural production

(2) Development of rural industry

(3) Development of Co-operative institutions

(4) Full utilisation of local manpower and other resources.

(5) Development of facilities for education and adult literacy

(6) Optimum utilisation of resources available to Panchayati Raj institutions.

(7) Assistance to economically weaker sections of village community.

(8) Progressive dispersal of authority and initiative.

(9) Understanding and harmony between elected representatives and officials through comprehensive training

(10) Cohesion and mutual self-help within the community.

Central support

Panchayati Raj was carefully nurtured by Pandit Nehru. However, after his death on 27th May, 1964, his successor, Shri Lal Bahadur Shastri, doubted its utility. Thereafter, financial resources of Panchayati Raj institutions were cut down and in most States Panchayat elections were forgotten or postponed. Smt. Indira Gandhi gave the country the slogan of 'Garibi Hatao' and extensive schemes were launched to achieve this objective under the original and the revised 20-Point Programmes. When Janata Government came to power in March 1977, the call for grass root democracy again came to the forefront.

A review of the functioning of Panchayati Raj institutions was made by Ashoka Mehta Committee (1977) which submitted its report in August, 1978. The most important recommendations of the Committee were (1) the creation of a 2-tier system of Panchayati Raj (instead of 3-tier in vogue), and (2) open participation by political parties in Panchayati Raj affairs. These recommendations were considered by the Chief Ministers' Conference in 1979. It rejected the recommendation of 2-tier system and a set of guidelines were prepared on the basis of consensus reached at the Conference. Though West Bengal and J&K have held Panchayat elections on party basis, as a convention the political parties abide by gentleman's agreement not to contest elections to Panchayati Raj institutions.

The varying interest shown in Panchayati Raj institutions by the government in power has reflected on their performance. The different surveys of their functioning were unanimous in pointing out lack of interest almost at every stage. The main drawbacks pointed out are summarised below:

(1) About two-third of the people who run Panchayats and Samitis have received no training to make them conversant with their duties and responsibilities.

(2) A very large population of elected leaders belonging to upper class/caste, who indulge in discrimination against the lower caste and poor people.

(3) Lack of proper finances.

(4) The plan process at the Panchayat level has no scientific basis.

(5) The leadership at the block and village levels has not shown enough awareness and capacity to give priority to developmental functions.

PM's concern for Panchayati Raj

While pioneering many result oriented schemes for rural development and modernisation of the country, our dynamic Prime Minister, Shri Rajiv Gandhi, has shown special interest in Panchayati Raj institutions and personally written to the Chief Ministers in August, 1985 to pay attention to the development of panchayats and their timely and proper election. It is hoped that while implementing this directive, the State Governments will pay special attention to remove the drawbacks summarised above.

Implementing Panchayati Raj

As the success of any institution depends not only on its constitution but upon those who run it, the implementation of Panchayati Raj programme in States would depend on the attitude of the Chief Minister and the interest shown by the Minister Incharge in the execution of the programme. In addition, the elected

representatives of the people—MPs, MLAs and MLCs, should also make their positive contribution by attending the meetings of Panchayat Samitis and Zilla Parishads, and move about in their constituencies to enlighten the masses of their rights and duties. Resisting the temptation of respective political or party considerations, they should cooperate with the officials and non-officials at all levels and offer constructive suggestions in their speeches on the floor of the legislatures. During his tours of the countryside the District Collector should also devote some time to oversee the functioning of Panchayati Raj institutions. The vigour and enthusiasm of available educated, enlightened and devoted rural youths has to be fully utilised for inculcating in the rural masses a sense of participation in the functioning of Panchayati Raj and implementation of development programmes with a conviction that by their own efforts they can improve their moral and material condition.

IRDP for uplift of rural poor

In 1978-79, various programmes for upliftment of the rural poor were replaced by a single Integrated Rural Development Programme (IRDP) on countrywide scale with the object of raising the poorest families in the rural areas above the poverty line (a family of five with income below Rs. 3500|- per annum), by generating employment opportunities for them and giving them subsidised income generating assets and access to credit and other inputs. Of the estimated 35 crore people below poverty line, about 30 crore are in the rural areas. The IRDP takes a family, rather than an individual, as the basic unit for development. The programme now covers all the blocks of the country and also forms part of the New (Revised) 20 Point Programme. It has been further supplemented with programmes like Training of Rural Youth for Self Employment (TRYSEM—15-8-79), National Rural Employment Programme (NREP—Oct., 1980), Development of Women and Children in Rural Areas (DWCRA—Sept. '82) and Rural Landless Employment Guarantee Programme (RLEGP—15-8-83).

Against the Sixth Plan (1980—85) target of 3000 families per block, i.e., a total of 15 million families, 16.5 million families are estimated to have been assisted to bring their annual income above the Rs. 3500|- mark and thus rise above the so called poverty line. Out of these, 6.45 million families belonged to scheduled castes and scheduled tribes.

Poverty amelioration

While briefing the newsmen on the salient features of the Seventh Plan, Dr. Man Mohan Singh, Deputy Chairman, Planning Commission, expressed the hope that those below the poverty line would come down from the present 37 per cent of the population to 26 per cent in 1989-90 in terms of the revised poverty line of Rs. 6400|- per year for a family of five members. It is proposed to bring it to less than 10 per cent by 1995. The concern of the Government for speedy rural upliftment is evident from the fact that as against the Sixth Plan allocation of Rs. 4,500 crore, the IRDP allocation in the Seventh Plan has been raised to Rs. 16,000 crores.

In its painstaking and objective appraisal of IRDP on the basis of comprehensive sample survey of over 16 States, the Planning Commission's Programme Evaluation Organisation (PEO) concluded that IRDP has enabled about 7.5 million families or nearly 38.5 million persons, to cross the poverty line. It also focussed attention on lapses in implementation, for example, Rs. 25 lakhs were diverted from IRDP funds in Karnataka for the construction of quarters for the Project Director and advances to the staff for the purchase of motorcycles.: Project officers in Himachal Pradesh squandered Rs. 38,000|- on whisky, rum, beer, soda, tea and biscuits. Further, 26 per cent of the selected beneficiaries in the sampled households were not eligible for assistance as they had an annual income of more than Rs. 3500 and 8.11 per cent of the lot had an income of about Rs. 5,000|- or more.

Importance of Panchayati Raj

The PEO survey amply supports the view that the Panchayati Raj institutions are not pulling their weight. The benefits of economic planning and poverty alleviation measures can only reach the poorest of the poor in remote areas through watchful and strong village panchayats, raher than simple enforcement of the programme by governmental agencies. Strong Panchayati Raj institutions are, therefore, *sine qua non* for effective implementation of anti-poverty measures at the grass root level. There has to be much closer involvement of panchayats in the identification of needy families on the basis of incidence of poverty and in the formulation of development programmes suited to their respective areas as well as their implementation. The Government has, accordingly, reiterated the importance of panchayats' role in rural development in the recently recast IRDP, as, in the words of Prime Minister Shri Rajiv Gandhi, "Panchayat Raj alone can ensure success of development programmes through peoples' participation."

Master weavers to be honoured

The Development Commissioner for Handlooms is in the process of finalising national awards for Master Weavers and Designers in the handloom sector so that it may act as a fillip for improving the skills and talents of the handloom weavers. The proposed national awards contemplate awarding Rs. 5,000 to each master craftsman covering sectors like weaving, designing, printing and innovations. The Committee for selection of Master craftsmen includes eminent personalities in the field of handlooms and textiles.

Land reforms rais‹
tillers' statur‹

S.N. Patha

Giving an account of various land reform measures in Uttar Pradesh, the author explains here in historical perspective how the pattern of land ownership has changed from exploitative system to a substantial section of rural populace like small, marginal and middle level farmers. They have been enabled to have a say in every sphere of rural life. The reforms through political process have given rise to new aspirations aimed at helping the villager to speed up the process of all-round development.

The relationship of human being to land is like a baby to his mother. Land sustains him by providing him with food, cloth and other essential items With the end of the nomadic existence of humans in general, the human being began to have a settled existence. His mastery over the art of agriculture led to the rise of hamlets, villages and later to cities. Land, thus, is the precious possession of a human being. This holds true of all societies including the Indian society also.

The land-tenure pattern or agrarian structure and socio-economic organisation are interdependent and changes in one leads to changes in the other. In India during pre-Aryan times the individual ownership rights were absent and there was communal ownership of land. The Aryan penetration did not have much effect on the pattern of land tenure. The rise of feudalism is generally associated with the advent of Mughal empire. The British rulers collected the land revenue through landlords. The landlords or *Zamindars* became intermediaries between the cultivators and the Government. They came to be known by various names in different regions, e.g., taaluqudaars, jotedars or raaja sahabs, etc. The cultivators had no direct link with the Government which led to unchecked increase in the arbitrariness of the landlord to collect whatever tax he wished from the cultivator.

This system was mainly prevalent in the North. I South India the Britishers had introduced *Ryotwa* *System* which was later extended to States of Bomba Brar, Central Provinces, Assum and Kurg. Under th system the land belonged to the cultivator and h had to pay the taxes to the Government. Another sy tem known as *Mahalwari* was introduced by the Br tish rulers in the provinces of Agra, Oudh, Punja and Central Provinces. Under this system the con munal land-ownership pattern was introduced and th *lambardar* was made the sole collector of the revenu

This land reform measure was partial and helped t give rise to a protected class of occupancy tenants. O the whole the land tenure system under the British wa oppressive. The advent of Independence movemer gave a fillip for land reform. A number of legislatior were passed which, however, made no appreciab dent in bringing about a reform in the land-tenure sy tem.

With the dawn of independence, new horizons we opened. Land reform became one of the major plan of the Indian National Congress Party's socialist pr gramme. After coming to power it appointed the Agr rian Reforms Committee in 1948, the recommend tions of which paved the way for drastic changes i the existing land tenure system. The land reforms fa within the jurisdiction of the States and separa legislation were brought forward by the States. Th basic aim of all land reforms was to abolish th *Zamindari* system and the intermediary system, in position of ceiling on land holdings, distribution of th surplus lasd among the landless and the co-operativ sation of land.

Land ownership in Uttar Prades

The land-reform measures enacted by the State Uttar Pradesh were progressive in nature and enabl the state to abolish the Zamindari system and the i termediary tennures, thus helping the deprived a dispossessed to own land. The restoration of land the tiller was the main aim of these reforms. The U. Zamindari Abolition Act, 1950 sought to elimin in the plains the rights of the intermediaries and oth vestiges of the feudal control of land, and to ben

the actual tillers by conferring upon them the ownership rights of the land they had been cultivating or had been in actual possession of. The land which was directly under the possession of the intermediaries, along with their groves, was allowed to remain with them with a ceiling limit fixed on 30 acres of irrigated land. Their rights were taken over by the State after payment of compensation to them on the basis of a set formula. Permanent ownership or Bhumidhari rights on all the land actually cultivated by the tillers were granted after payment of only ten times of the rent they had been paying to the intermediaries. Under the new law, more than 80 per cent of the total cultivating population benefited in a big way. More than 70,00,000 families got their rightful claim on more than 3,50,00,000 acres of land they had been toiling Thus the U.P. Zamindari Abolition Act, provided to be a hallmark in the history of land reform not only of Uttar Pradesh but of the country as a whole.

Distribution of land to weaker sections

In order to ensure equitable distribution of land, Land Holding Act, 1960, was enacted As a result of this Act, some 2,88,592 acres of land was declared surplus out of which 2,65,170 acres was taken in possession by the State up to the end of January 1983. Out of this 1,40,634 acres of surplus land was distributed among 1,94,988 landless persons, including 1,44,381 persons belonging to the scheduled castes and scheduled tribes. In view of the special problems of Kumaun and Uttarakhand, Kumaun and Uttarakhand Zamindari Abolition and Reforms Act was passed in 1960 and amended in 1978 The rights of *hissedars*, i.e., intermediaries in the hill area with respect to their private forests were abolished and vested in the State with effect from January 1, 1978. Further changes were made in Land Holding Act, 1960 in 1962 with the aim of narrowing down the disparity among tenure holders in rural areas. The amended Act was enforced from June 8, 1973 and the ceiling limit was fixed at 18 acres at 7 30 hectares of irrigated land instead of 40 acres of fair quality land. Thus the earlier fixation of ceiling on the basis of quality of land was replaced with the irrigation criterion.

Another milestone in the annals of land reform was the passing of the U P. Consolidation of Land Holding Act 1954, with the basic aim of removing the bottlenecks in the development of agriculture because of the fragmentation of land holdings Many of the land holdings were too small in size and scattered to become economic or productive from the agricultural point of view. The Act proved a boon for small and marginal farmers. Previously the Act was made applicable where the 60 per cent of the total land area was suitable for consolidation. Now the amended Act is applicable even where 40 per cent of the total land is considered to be fit for consolidation. The total area to be consolidated was about 186 lakh hectares, while 149.32 lakh hectares of land have been consolidated at an estimated cost of Rs. 114.21 crore up to the end of financial year 1981-82. The Government proposed to consolidate 3.90 lakh hectares and 3.95 lakh hectares of additional land in the financial year 1982-83 and 1983-84 respectively for which a provision of Rs. 13.70 crore was made.

The U.P. State Government amended the U.P. Zamindari Abolition Act, 1950 in 1971 in order to give permanent rights to people belonging to weaker sections over their homesteads. The amended Act specifically provided that all such agricultural labourers, village artisans and persons of the scheduled castes and scheduled tribes who had built houses on land owned by the Gaon Sabhas prior to May 24, 1971 were owners of their house-sites. The district officers of consolidation were instructed to reserve land in every village according to the needs of Harijan bastis and wherever gaon sabha land was not available, house sites were provided after extra acquisition of land. At the beginning of 1983, more than 15,57,218 families had been allotted house-sites under the impact of the amendment of the Act.

Exemption to small land holders

Another progressive feature of the land reform movement in U P. was the exemption of land holders upto 1.26 hectares (3.125 acres) from the liability of payment of land revenue with effect from the agricultural year commencing from July, 1977 vide U.P. Land Laws (Amendment) Act, 1978. The land development tax has been abolished with effect from the agricultural year 1979 vide repeal of the U P. Land Development Tax Act, 1972.

Cooperative farming helps small farmers

The formation of co-operative societies was aimed at helping the small and marginal farmers in achieving better agricultural productivity and thereby raise their income. This measure was envisaged in the U.P Zamindari Abolition Act, 1950. However, it was left to the free will of the farmers. The Government encouraged the farmers to form co-operative societies by giving them liberal grants for purchase of agricultural implements and inputs. The U.P. Cooperative Societies Act, 1956 provides for two types of co-operative farming societies, viz , the joint and the collective. There are in all 1,497 co-operative farming societies in the State, out of which 1,335 are joint and the rest 162 are collective ones

Thus it is clear that all the land reform measures were aimed at helping the rural mass to achieve substantial measure of progress. These measures paved the way for the emancipation of lower and middle castes. These measures were a part and parcel of the political process by which a substantial section of rural populace began to have a say in every sphere of life. These measures have given rise to new aspirations.

Financing of IRDP

Dr Gurajala Sudarshan

The author analyses in this article the assistance given by various financial institutions for schemes under IRDP especially for agriculture and its allied activities. For this purpose he selected Warangal District of Andhra Pradesh. His study revealed that share of commercial banks in the advancement of loans for various schemes is higher than those of co-operative banks and regional rural banks!

INTEGRATED RURAL DEVELOPMENT means functional integration of various sectors of development such as agriculture, education, etc and spatial integration for which we have to locate the settlements for the development. Moreover, growth with redistribution is the permanent goal of Integrated Rural Development Further, rural development calls for radical departures from traditional principles, practices and priorities in development planning with a view to harnessing the potential of science and technology for the optimum use of national assets, human, animal and physical, for removing poverty and unemployment in the rural areas. Thus, the strategy for the rural development is the strategy to redress the twin problems of rural poverty and unemployment. In rural areas, a large number of landless agricultural labourers remain unemployed for a considerable part of the year. The small and marginal farmers who are self-employed neither have sufficient farm work to do throughout the year nor get adequate income from cultivation to enable them to rise above the poverty line. To redress the poverty and unemployment in rural areas, Integrated Rural Development Programme was launched. It includes suitable income generating schemes in sectors like agriculture animal husbandry, dairy, fisheries, khadi, village and cottage industries, artisans, crafts, small business and services.

Credit is one of the pre-requisites for carrying out development programmes. But non-institutional credit has negative effect on agriculturists and co-operative credit institutions have played an almost insignificant role in providing credit. As a last resort, the commercial banks were nationalised with a view to providing credit to all classes and all sectors of the economy.

After the nationalisation of the commercial banks, the financial activities of these banks have shifted from class-banking to mass-banking and credit is now production oriented rather than security-oriented. These financial institutions are entrusted the task of financing the activities under IRDP and advancing loans for the programmes such as agricultural operations and inputs, purchase of equipments such as electric motors, oil engines, and for the purchase of land and durable assets, etc.

Methodology

Since rural development is closely connected to the activities of financial institutions, some related activities of these financial agencies are studied in this paper The main objective of the paper is to examine the financial assistance provided by the various financing institutions for schemes under IRDP with a special reference to agriculture and allied agriculture activities

For the purpose of study, Warangal district in Telangana region of Andhra Pradesh State was purpose fully selected. The district consists of six taluks namely, Warangal, Mahabubabad, Parkal, Jangaon, Mulug and Narsampet. In these taluks 19 institutional financial agencies are financing agriculture, industry and allied activities of IRDP through 163 branch offices by assisting 4250 advancing units and by sanctioning Rs. 11061 lakhs credit. Keeping in view the main objective for the purpose of study, total accounts of one calender year of 1983-84 were examined Secondary data relating to various activities of financing agencies were collected from the office re-

cords of the Lead Bank Officer, Lead District Office, Warangal.

Presentation

The purpose-wise advancement of units and nature of financing agencies are shown in the Table I

TABLE I

Nature of Banks and Purpose-wise Advancement of Units

Sl. No.	Purpose	Nationalised Commercial Banks	Regional Rural Banks	Co-operative Banks	Total
1.	New Wells	103 (88 8)	..	13 (11.2)	116 (100.0)
2.	Old Wells	376 (99.2)		3 (0 8)	379 (100.0)
3.	Electric Motors	372 (94 6)	1 (0.2)	20 (5.1)	393 (100.0)
4.	Oil Engines	160 (87 9)	.	22 (12.1)	182 (100 0)
5.	Plough Bullocks	577 (72.5)	25 (3.1)	194 (24 4)	796 (100 0)
6.	Bullocks and Carts	524 (70 8)	26 (3 5)	190 (25.7)	740 (100 0)
7.	Plantation	79 (100 0)	..	..	70 (100 0)
8.	Milch Animals	251 (81 2)	38 (12 3)	20 (6 5)	309 (100 0)
9.	Poultry	21 (100 0)	..	.	21 (100 0)
10.	Fisheries	159 (49 5)	..	162 (50 5)	321 (100 0)
11.	Animal Rearing	618 (82 6)	53 (7 1)	77 (10 3)	748 (100 0)
12.	Pig Rearing	78 (90 7)	6 (7.3)	2 (2 3)	86 (100 0)
13.	Gobargas Plant	6 (100 0)	..	..	6 (100 0)
14.	Others	74 (100 0)	..	..	74 (100 0)
	Total	3398 (79 9)	149 (3 5)	703 (16 5)	4250 (100.0)

Source : Office Records of the Lead Bank Officer, Lead District Office, Warangal, A P.

Note : Figures in parentheses denote the percentages to total.

It shows that of the total financed units, 3398 units were assisted by nationalised commercial banks and of the total units 796 units were assisted for plough bullocks. Of the units helped by nationalised commercial banks 618 were finance for animal rearing and 577 were assisted for plough bullocks Among the units financed by co-operative banks 194 units were financed for plough bullocks, whereas among the units helped by regional rural banks 53 units were assisted for animal rearing. Most of the units were financed for plough bullocks and nationalised commercial banks assisted the most of the units. Regional rural banks and co-operative banks are not covering all categories of units. The units financed by them are far less than those financed by commercial banks This indicates the weakness of organisation and management of these institutions.

Table II indicates the purpose-wise deployment of loans and nature of banks. It shows that of the total deployment of loan, Rs. 8269 thousand were given by nationalised commercial banks and of the total deployment of loan Rs. 2068 thousand were for purchasing plough bullocks and carts. Loans worth Rs. 1378 thousand were given by the nationalised commercial banks for electric motors of the loans given by co-operative banks Rs. 747 thousand were given for the purchase of bullocks and carts, while out of the regional rural banks assisted loan, Rs. 171 thousand were given for animal rearing. It is also noted from the table that of the total deployment of loan, the highest average of Rs. 3400 were given by co-operative banks and of the total loan the highest average of Rs. 7,500 were for gobargas plants. Among the nationalised commercial banks the highest average advancement of loan was financed for gobargas plants, whereas in co-operative banks, the highest average deployed loan was found in pig rearing and in regional rural banks, the highest average deployed loan was for electric motors.

TABLE II

Nature of Banks and Purpose-wise Advancement of Loans

(Rupees in Thousands)

Sl No.	Purpose/Nature of Banks	Nationalised Commercial Banks	Regional Rural Banks	Co-operative Banks	Total
1.	New Wells	325 (3 2)	.	51 (3.9)	376 (3.2)
2.	Old wells deepened	829 (2 2)	.	6 (2 0)	835 (2 2)
3.	Electric Motors	1378 (3.7)	4 (4.0)	90 (4.5)	1472 (3 7)
4.	Oil Engines	404 (2 5)	.	120 (5.5)	524 (2 9)
5.	Plough Bullocks	988 (1 5)	47 (1.9)	532 (2.7)	1567 (1 9)
6.	Bullocks and Carts	1243 (2 3)	78 (3.0)	747 (3 9)	2068 (2.8)
7.	Plantation	122 (1 5)	.		122 (1.5)
8.	Milch animals	557 (2 3)	68 (1.8)	50 (2.5)	675 (2.2)
9.	Poultry	155 (7 4)	..	..	155 (7.4)
10.	Fisheries	429 (2 7)	..	588 (3.6)	1017 (3.2)
11.	Animal Rearing	1344 (2 2)	171 (3 2)	212 (2.7)	1727 (2 3)
12.	Pig Rearing	208 (2 7)	13 (2.2)	15 (7.5)	236 (2.7)
13.	Gobeargas Plant	45 (7 5)	..	..	45 (7.5)
14.	Others	242 (3 2)	..	.	242 (3.2)
	Total	8269 (2 4)	381 (2 6)	2411 (3.4)	11061 (2.6)

Source : Office Records of the Lead Bank Officer, Lead District Office, Warangal, A. P.

Note : Figures in parenthesis denote averages to total.

(Continued on page 30)

A case study

Problems of transferring technology to rural areas

Dil Bagh Kaur

In a case study on transferring of smokeless chullahs to the Wazirpur village in Haryana, the author comes across several interesting facts about the acceptance and non-acceptance of the chullahs by the villagers. She feels that while giving inputs of new technology, the attitudes, interests, perceptions, inhibitions and restrictions of the villagers are not taken into consideration. Often new technology is developed from the scientists' point of view only. What is most needed is the creation of a rapport between scientists and the villagers.

ANY DISCUSSION ON technology generally emphasises the mechanical aspect as a technology is taken to be based on some type of machinery or equipment. Thus in trying to transfer the technology to the rural sector, the strategies involved mainly deal with respect to mechanical aspects. In generating technologies for the rural sector two approaches are adopted : either the scientists conceive of certain technological requirement and develop suitable technologies in the laboratory or certain felt needs of the common people are conveyed through available channels to the R&D unit for technical solution. In either case once the technology is developed, the transfer is envisaged in mechanical terms. However most often than not we find that new technologies are not accepted and do not have the desired multiplied effect.

Human psychology, decisive

Possibly the lacuna is that while giving the inputs of technology, man-power and monetary support, the mental design of human beings is neglected. Their attitudes, interests, perceptions, inhibitions, and restrictions are not taken into consideration. More thinking is needed in the direction of improvement of human infrastructure in terms of their capabilities, changing their motivations, attitudes and values for developmental programme so that they can observe the economic opportunities to which they are exposed.

For example, human psychology is generally to resist anything forced on them and this starts right in the cradle when even the new born child turns its face if attempt is made to feed him forcibly. Thus it is not surprising that if a technology or an idea is forced on, the people's tendency is to resent even if in the ultimate run this could be beneficial. A careful and sensitive handling of the human mind with patience to enable the people to make up their own minds is very important and this is feasible only if a rapport is created between a technician or social scientist interested in technological transfer and the villages. In particular in the present rural-urban context, there seems to be a lack of confidence and understanding. However, the need for rapport building has been recognized and the concept of extension centre especially in transfer of agricultural technologists have achieved some measure of success. However in transferring other type of technologies either from the point of view of improving their quality of life or generating some employment opportunities, such infrastructure is still lacking.

The smokeless chullahs

The present article analyses the various aspects of technology transfer with the case study on transferring of smokeless chullah to a village in Haryana by the Centre of RD&AT, I.I.T., Delhi.

Such a programme has basically the following components .

- The development of technology itself.
- Creating of rapport with the villagers.
- Dissemination of information on the technology to the villages.
- Taking the technology to the villages.
- Get the feedback and improve the technology if necessary to overcome the shortcomings.

Often technology generation is done from the scientists' point of view only. For example in the case of improved chullahs, the scientists will have the following parameters in mind with respect to creating a suitable design.

- A design which gives maximum efficiency in terms of fuel consumption.
- The byproducts should not be harmful and not pollute the environment. For example the smoke should not have toxic gases like carbon monoxide.
- The smoke could be led out of the chimney so it does not pollute the kitchen

While the traditional chullah burnt with locally available fuel has efficiency less than 10 per cent, new design have met efficiency upto 20 to 30 per cent

However in the present study it was realized that this was not enough. A survey has to be conducted on the type of chullah design, cooking practices and fuels consumed in that area so that these preferences are made part and parcel of the improved chullah design.

The villages sector selected by the Centre for Rural Development and Appropriate Technology of I.I T. is Wazirpur of Gurgaon district. There are 219 families in it. Mainly two castes are prevalent in this village, Rajput and Harijan. This village was chosen because of its progressiveness. Rajputs are land owner, the Harijans are either working on the Rajput's land or doing service outside village.

The strategy adopted

The author along with the team visited the village again to establish a sound rapport with the village folk. During the visits the technology of improved chullah was propagated through these strategies :

(1) Talks.

(2) Demonstration.

(3) Head of the village.

A meeting was arranged, a talk on improved chullah was given, efficiency of chullah, saving in time and fuel, the smoke problem were brought to light. A demonstration of chullah was given in patwari's house.

Through these strategies, we were able to install 40 chullahs. Initially there were different reactions of the rural folk which are following :

- Some instantly said yes
- Others gave it a thought before saying 'yes'
- Many of them followed it blindly.
  Reasons for accepting the improved chullah.

Reasons for accepting chullahs

Through general observations it was noted that most of the reasons for accepting and installing the improved chullahs were personal or social. For example ·

- A few of them said yes because it seems to be prestigious to have a new technology in their own home—A kind of recognition or superiority will be there.
- A few were interested in trying a new technology. They actually did not understand the technology but the interest was to have something new.
- A few installed the chullah to show off to the others that they are modern as they are using the new technologies. This feeling of show off is purely psychological.
- A few had no say of their own, they just followed the others blindly.

And for not accepting

We summarise all those reasons which have affected the acceptability of the improved chullah.

- Attitudes of rural people towards govt. schemes did not help in expansion. Their attitude is to go for this change with govt. aid only and they did not want to take any enterprises on their own.
- Fuel—they are not facing any fuel crisis. Mostly they are using dry twigs of the used plants. Firstly, they are not spending any money on the fuel. Secondly, they do not have to go too far away places to get the dry twigs. It is easily available while clearing the fields. It hardly matters to them personally whether the fuel consumption is more or less.
- Time saving is also not an important factor for them. Out of the forty houses only four houses actually appreciated the time element. Men of these houses have to go to Delhi for their job. For them it was important to have meals as well as tea together early in the morning in most of the other houses there

(*Continued on page* 23)

Increasing status of Indian women

Swapan K. Seth

Women now enjoy better status, economically and socially. More women are in employment today. The author says the ratio of literate and employed women is increasing faster than that of men. Women are supporting the inadequate family income by accepting even odd jobs. The author feels these factors no doubt have raised the status of women in society.

There is perhaps a consensus that the present status of Indian women is not satisfactory at all, rather it is is below normal. The personalities who expressed thoughts on the issue differed on the views wheher the Indian women were capable of upgrading their own status Some social scientists opine that the rate of improvement in the status of Indian women is lower than that of men. In view of the changes in the socio-economic condition, the different aspects of the status of Indian women may be discussed and in that case the concerned problems may be highlighted.

Males outnumbering females

In the present discussion, the researcher would, first take up the relevant statistics. Needless to say that India today has remarkably greater number of males than females. The Indian Census Reports of 1951, 1961, 1971 and 1981 already revealed that the average number of females against one thousand males were 946, 941, 930 and 935 respectively So this was much lower as compared to the world ratio. This prompted the idea that as the female sex is highly neglected in India the female mortality here is higher and as a result men outnumber women considerably. But a closer look would make this idea unrealistic. It was obvious that the average number of female births per thousand of male birth was tremendously lower in India. This would be seen in the tables 1, 2 and 3.

From the above-mentioned tables it could be seen that the average number of births of female child is remarkably lower than that of male child in India. And it might be said that this situation has not changed as yet. In this connection the Census Commission stated, "The sample Registration Scheme which covers all parts of India gives the pooled sex ratio of .923 and .928 for India in 1968 and 1969 at birth". The higher male birth rate is one of the causes which lead the number of females proportionately less that of males in India in comparison with the world figure

Better status for women

In the developed and the developing countries of the capitalist group it is the females who fall far short of males in the economic field. In India, if the same phenomenon is noticed, it would not necessarily point at any thing new. There is no denying the fact that the females, like males, could get themselves released from economic limitations. The different facilities for economic upliftment for females at present are appreciating, no doubt. And this economic upliftment is co-related to the culture and education. If it is found that the women have got better opportunities in the field of education and employment today compared to the past, it will be evident that they have acquired a more elevated status.

Since Independence, the trend of literacy among women would reveal that female education was on the way to gradual progress. (Table 4).

Increasing literacy among women

From the above table it was seen that the rate of literacy of both men and women was increasing. Besides, it is to be noted that female literacy rate was too low in the early decades of the present century. In 1901 the literacy among females was less than one-sixteenth to that of men while it was gradually increasing in the case of men. It was worth noting that the rate of literacy among men was, to say, stagnant during 1941 and 1951, while an increase, though marginal, was observed in case of women. In an indepth study it might be noticed that the male literacy rate was 12.2 per cent in 1921 and 15.59 per cent in 1931, i.e., in this ten year period it increased at the rate of 27.86 per cent, while in the case of women the increase was from 12.95 per cent to 18.69 per cent in the decade 1961-1971. The overall growth rate of literacy was 43.84 per cent. Further it would be found that the rate of literacy among women was less than one-third to that of men since Independence but at present that has increased to more than the half to that of men. So, in the field of education, this rate of increase hints at the positive, non-stop and relatively higher rate of progress in female education compared to males in India.

More women on jobs

It could be seen that the social and political independence of women also paved the way for economic freedom. It cannot be denied that in this respect the women lag far behind men today. Of course, the gulf has been bridged to some extent now. In other words, the women are improving their lot in the economic sphere too. Still some express the view that in the field of employment the women are lagging much behind. In the subsequent paragraph this will be discussed.

In India, with a democratic set up, there is no compulsion on both men and women to work. It has been noticed in the recent years that the ratio of women employees is decreasing in proportion to that of males. But this inference is also not scientific.

Occupations may be classified under three heads: Primary, Secondary and the Tertiary. The primary sector includes agriculture, fishery, collection of natural wealth, etc., the second stratum consists of industry and construction works, etc.; the third sector includes office jobs, medical and teaching work, etc. It might be assumed that the job of the first and the second nature are mostly not meant for women, i.e., not suitable because of their physical structure; whereas the third category of professions is, in most cases, suitable for weaker sex also.

It was also found that in the primary sector the rate of increase of female employees had shown a downward trend, and in third sector it had registered an upward trend; it will be evident that the status of Indian women has improved so far as the field of occupation is concerned. In a recent study it was observed that the women were inclined to accept the responsibility of making up the family needs by doing any kind of work even under very inferior working conditions. The supply of female labour, therefore, is not a function of marginal wage rates but is determined negatively by the level of their family income. In this regard Ranade and Ramachandran had seen similar picture, they wrote: women are mainly supplementary earners and their stay in labour force is likely to be of temporary duration as they get married. A married woman does not have to take a job particularly when economic condition of her husband is good*. So, it showed that the supply of women workers in inferior type of jobs, i.e., for primary and secondary sectors was negatively related to their economic conditions but positively related to superior kind of job, i.e., tertiary sector.

Better eligibility of women

In Census Report of 1981, we see that 33.09 per cent of total population was employed in 1971 and it had been increased upto 33.44 per cent in 1981. The Report revealed that this slight increase in the number of employees in our country had taken place when females were engaged in various occupations. In the last decade, the ratio of women labourers decreased as compared to the previous decades in the rural area. So it is evident that females are now resorting to the primary sector of employment on a lower scale. In other words, they have acquired such a better status now so as not to take up those jobs. But simultaneously female employment in service sector has been going up. Therefore, it might be concluded that women have acquired better status in the matter of securing eligibility for securing white-collar jobs.

It is an economic rule that when real income of people rises, ceteris peribus, the consumption as well as purchase of the inferior goods register a downward trend while those of superior goods go up. In the field of employment also the same criterion applies.

To conclude, it might be said that with development of Indian economy, the status of Indian women has gone to a higher level during the last two or

*Women and Employment, S. Ranade & P. Ramachandran, 1970.

Three decades. And it would not be out of place to mention that the rate is faster than that of men.

Table 1

Average number of female births per thousand male births

	1891-1901	1901-1911	1911-1921	1924-1928	1929-1933
Bengal	936	941	933	926	926
Bihar & Orissa	942	955	950	960	960
Bombay	926	926	925	926	926
C. P.	941	954	955	950	950
Madras	959	958	956	960	960
N.W.F.P.	816	819	905	770	770
Punjab	906	909	906	890	890
U P.	918	924	919	890	890

Source : National Planning Committee, India, *Population*, (Bombay ; Vora & Co., 1947).

Table 2

Proportion of male born to every 100 females

Province	1924-28	1929-33	1934	1935	1936
N.W.F.P. . .	130	130	129	130	130
Punjab . .	112	112	112	112	112
Delhi . .	108	108	107	106	109
U.P. . . .	112	112	113	113	113
Bihar & Orissa .	104	104	106	106	106
Bengal . .	108	108	108	112	108
Assam . .	106	106	107	106	107
C.P. . . .	105	105	106	105	105
Bombay . .	108	108	108	108	106
Madras . .	105	105	105	105	105
Coorg . .	107	107	108	114	108
Ajmer-Merwara .	116	116	119	115	113

Source : National Planning Committee, India, *National Health* (Bombay, Vora & Co., 1948)

Table 3

Sex Ratio (Females|Males) at birth in India

1955	All India average	.909—
1956-58	All India average	892*
1963	For twelve States only	889**
1964	For twelve States only	.900**

Sources : Calculated from

—Director General of Health Services, India, *Health Statistics of India* 1954-55.

* Registrar General of India, *Vital Statistics of India* 1960.

**Registrar General of India, *Vital Statistics for* 1963, 64.

(*Continued from page* 20)

was no urgency. They do not bother about being busy all day with their chullah.

Thus if the housewives were also involved in some income generating activity then they might be motivated to finish their work sooner.

— Food habits played a great role in deciding the installation of the type of chullah. A few house wives who were impressed with the improved two pot chullah in the beginning, realized later that the day when they do not prepare any vegetable, there is no need for the second pot. They set their chapaties with butter, matha or pickle.

Survey showed that only five out of the forty houses make veg., dal and roti; ten make one thing either dal or veg, others eat roti with pickle, matha or butter

— Season—Like food habits, season is another deciding factor for the village people in the use of one pot chullah or two pots. We started this programme in winter. During that period all the forty houses were using both the pots irrespective of their food habits. Most of the time the second pot was used to boil the milk, to make tea or to keep the eater to have it warm for bathing, washing clothes or utensils. But in summer not much use was found for the second pot.

There is one more effect of the season. In winter chullah can be built in the courtyard but it is a problem in rainy season and summer. If it is a built in chullah they cannot take it inside. Secondly, it takes lot of space. Thirdly, it is not easy and safe to build the chimney inside the house.

In conclusion, it can be said that this technology was a success as since those who were given the chullah willingly use it and see the advantages. But achieving the multiplier effect is much more difficult and deeper involvement of the people is called for. □

Table 4

Rate of Literacy in India (Percent)

	1901	1911	1921	1931	1941	1951	1961	1971	1981
Male	9.83	10.56	12.21	15.59	24.90	24.95	34.44	39.45	46.7
Female.	0.6	1.05	1.81	2.93	7.30	7.93	12.95	18.69	24.88

Source : Registrar General & Census Commissioner, Census of India, 1981, Series-1, India, Paper 1 of 1981, *Provisional Population Totals.*
□

Enabling education to face challenges

Pradeep Kumar Srivastava

In this article, the author highlights the bottlenecks that today's education suffers from and suggests certain steps to reinvigorate education to meet the challenges of the remaining years of the twentieth century and the early years of twenty-first century. He feels that without bringing education on the Union List, the objectives of creating a conducive environment for national consciousness and national integration and developing multilingual competence in the future citizens will remain elusive.

Through the journey of over 5000 years of cultural continuity, India had seen both golden as well as dismal periods in the field of education. In the twentieth century, for the first time Indianise thinking about mass education had been made comprehensively under the inspiring leadership of Mahatma Gandhi at Wardha in 1937 and given structures and strategies commonly known as Basic Education. After Independence, University Education Commission (1948-49); Secondary Education Commission (1952-53); Indian Education Commission (1964-66) reviewed different aspects of education and then in 1968 a National Policy of Education was evolved by the Government of India for radical reconstruction of education by relating education more closely to life, expanding educational opportunity, improving quality at all stages, emphasising development of science and technology and by cultivating moral and social values. While success was achieved in some sphere, largely these tasks remained unfulfilled due to the apathy of the people, hurdles at the implementation stage and non-conducive environment.

Debate is currently on about formulating a new education policy to meet challenges of the remaining years of this century as well as the coming years of 21st century. This time it seems that vicious callousness about education is breaking slowly but efficiently due to initiatives taken by highest political leadership of the country.

Formidable challenges

Education has always been accorded an honoured place in human society. The march of civilization shows the evolution of education as one of the most essential activity of human life from cradle to grave. The destiny of an individual, a nation or, we can say the whole humanity depends on only one endeavour that is, education of human beings. In the space age civilization, with a rapidly changing world, the education system has to renovate and reinvigorate itself to meet the challenges of its time. It may be worth while to note historical trends posing challenges to education, viz., (i) direct link between ignorance and poverty were being discovered, (ii) economic development and efficiency of human beings is being hindered due to lack of education, (iii) unprecedented demand for education is increasing continuously, (iv) science and technology is influencing human life with increasing vigour, (v) exploding population and (vi) scarcity of resources.

Education's humane potential

The basic foundations propounded as the pillars of the present as well as future society on the globe are democracy, socialism, secularism, humanism and science and technology oriented production. Education policy cannot ignore to note these while formu-

ting structures and strategies for education. A harmonious balance between the products of science and chnology on the one hand and products of spirituality on the other hand by the education may lead to lvent of golden age for the humanity. Neo Malthusian view that education should be rationed and ept closely in line with employment demands cannot survive in an ever-increasing democratic environment; hence this view shall be rejected outrightly. One annot deny the fact that education, apart from economic aspect, has many potentials purely humane in ature, which must be pursued by an education policy. is this humane aspect which forced the declaration f education as a human right by the Universal eclaration of Human Rights adopted by the United lations in 1948. To develop educational structures nd strategies on productive, scientific, democratic, ocialistic, secularistic and humanistic lines is the all of the moment to meet immediate as well as future hallenges which the education will have to face. The cientific and technological innovations in the field of ommunication, cybernetics and printing media give s courage and hope to devise and implement educational structures and strategies with utmost scientific efficiency.

The goals to be achieved by education can be best eclared only in individual, national and international ontext, concurrently, which may ultimately lead to elfare of humanity by providing materials needed for omfortable living to human beings and also helping hem to uplift themselves spiritually. The Prime Minister, Shri Rajiv Gandhi was very right in setting he goals before the nation in his maiden Independence Day speech this year when he observed mere economic growth is not the goal of progress. It vould be meaningless without preserving the great eritage of the nation. The various sections including he youth, the women, the minorities and the poor vould have to be strengthened to play their rightful ole in the march towards progress which would be a ong one.

Let us examine the ideas which can be given pragmatic and progressive shape in the new education olicy to integrate education with the destiny of India and whole humanity.

Bring education on Union List

Justice, Liberty, Equality and Fraternity are the pillars on which Constitution of India stands. Since the enforcement of Constitution, education is essentially a state subject, but the Centre was invested with certain specific responsibilities which have been mentioned in Lists I and III of the Seventh Schedule of the Constitution. During the preparation of report of the Indian Education Commission (1964—66), the idea of placing education on concurrent list had been reviewed thoroughly and it was resolved that the scope within the existing constitutional provisions for centre-state participation in education for the development of education and evolution of a national education policy have not been fully exploited; hence the idea for placing the education on concurrent list had been dropped. But in 1976, by an amendment in the Constitution, the education was brought on concurrent list, but the main responsibility in the field of education was left to state. The experience of years, since the launching of Constitution of India, had shown that for the lack of adequate authority at Centre national policies could not be successfully implemented to secure the basic tenets of the Constitution and the danger to the security and unity of the nation came so soon for which the freedom struggle was a long drawn battle. The excellent recommendations of many commissions and committees on different spheres of education remained on paper and unimplemented. The development of national consciousness, new attitudes to the national character of education, national integration through the unity of minds of citizens belonging to different religious faiths, castes, regions, etc. or what may be set as national goals, will not be effectively achieved unless serious thought is given to bringing education on the Union list of the Constitution. The scope of centre-state partnership in the field of education is withering day by day and we have to provide for largest good to largest numbers in the least time. Education as a state subject or a subject on concurrent list will not serve the purpose as it had been tried and failed miserably in achieving its goals which is axiomatic from the poor percentage of literacy, i.e., 36.23 per cent of the total population. If India wants to achieve 100 per cent literacy as wished during the struggle for freedom by the father of nation, Mahatma Gandhi, and to move towards the ideals of life-long education and learning and productive society by moulding the rising generations on nationally integrated lines, it is right time to amend the Constitution of India to bring education on Union List. The tardy progress in the sphere of education cannot be checked except by a continuous central control, direction, management and monitoring of the implementation of the policies formulated by the Government to secure the objectives of the Constitution. We have to achieve the desired goals within the remaining years of twentieth century and to go in 21st century with educated and nationally committed citizens to serve the country and the humanity. The goal of bringing uniformity in educational structures and national integration through education can be brought only by bringing education on Union List of Constitution.

Create conducive environment

Promotion of national consciousness and national integration are crucial for the survival and progress of the nation. The national environment is polluted everywhere with political interference, mutual distrust, mental isolation, narrow-mindedness, prejudices, linguistic differences, regionalism, complicated caste system communal tensions disregard for public pro-

party, corruption in public life, tendency to lead an easy way of life, indifferent attitude towards building the nation strong, alienation from the rich and varied heritage of the nation, indiscipline in educational and social institution at every level, disintegration of value system, desires to fulfill narrow interests at the cost of larger interests of the nation. The root cause of every one of the aforesaid maladies polluting national environment is the political leadership. They failed in their duties in creating an environmnet conducive for the promotion of national integration. Equally failed in this respect are teachers, parents, guardians and, we can say, everyone of us. It is the right moment for the political leadership, teachers, parents, society and every citizen of this country to help in creating in the country an environment conducive for the development and progress of individual citizen and the nation on right lines by rekindling the flame of national spirit and oneness with which we have worked and fought during the freedom struggle. Education with its wide network of institutions and easy reach to the people can play an important role in this respect.

What is needed!

Following steps may be desirable for creating a conducive environment for promoting national consciousness and national integration :

(i) To improve the family environment, an effective programme for parental education may be broadcaste over T.V. and radio. Parents have to change their behaviour so that they may develop desirable attitudes in their wards, because children learn more from imitation than preaching.

(ii) Exposure of citizens to the grandeur of India's freedom struggle through mass media like documentary films on the lives of national leaders and relaying their recorded speeches of social importance, e.g., famous first Independence Day speech of Pt. Jawahar Lal Nehru "A Tryst with Destiny".

(iii) Increasing the frequencies of programmes depicting the national developmental activities and citizens' role in their success. national songs and dramas on national themes on T.V. and Radio.

(iv) Showing programmes on T.V. for development of proper etiquette and manners at every stage of education, i.e., in family, peergroup, social gatherings and formal school, etc.

(v) Banning exhibition of violent and obscene scenes in entertainment films. Instead the screening of films which have cultural and patriotic values be given every encouragement.

(vi) Ban on obscene posters of films and advertisement at public places.

(vii) Developing civic sense and common citizenship. For this a common code of conduct may be evolved for citizens.

(viii) Every citizen should be encouraged to bring about integration in his mind, speech and action.

(ix) A scientific way of thinking and behaviour on the part of citizens is needed to utilize new aids from science and technology for comfortable living and efficiency in work.

(x) Encouraging positive human values, viz., Truth, Right-conduct, Love, Peace and Ahimsa in the lives of citizens.

(xi) The citizens must show reverence for national flag and national anthem. They must stand in position of attention whenever national anthem is played either on radio, T.V. or any other gathering or when national flag is hoisted. They must participate wholeheartedly in national festivals and take pledge for the security and integrity of India.

(xii) A national mode of salutation may be desirable in daily life, eg., Vandematram or Jai Bharti at first meeting and Jai Hind or Jai Bharat at the time of departure.

(xiii) Daily participation of every citizen of good health in productive activities e.g., spinning as introduced by Mahatma Gandhi. This will bring integration of consciousness of all Indians.

(xiv) Every citizen who is earning must donate monthly a small part of his earnings to National Development Fund to be used for the welfare of less fortunate citizens. It will be a symbolic of their feeling of oneness with India and its citizens.

(xv) Organization of (morning march) prabhatpheries singing national songs and raising national slogans on the working day or Sunday once a week to motivate the citizens for participating in national development. This programme can be effectively implemented through wide network of educational institutions.

(xvi) Organizasion of a monthly nationwide civil defence exercises so as to create a nationwide awareness and alertness.

(xvii) Organization of educative exhibitions at district and block levels, which may depict different developmental activities taking place in that area and also for familiarising citizens with the welfare measures taken by the Government for their upliftment.

(xviii) Effective and impartial administration is essential for creating a conducive environ-

ment. For this effective checking of political interference in every sphere of social life is essential as without this step every effort will sure to be a failure.

(xix) The central and state government must plan to open national centres for productive work and community service at least one in each block.

(xx) A strict and persuasive discipline in the atmosphere of educational institution is very essential for creating a conducive environment for harmonious development of coming generations on right lines.

(xxi) Introduction of a common school system of public education, making national and social service as compulsory and integral part of education at all levels and development of modern Indian Languages and Hindi, as suggested by Indian Education Commission (1964-66) will go a long way in integrating the consciousness of Indians.

Develop multilingual culture!

The language is the most powerful means of communication among human beings nationally as well as internationally. No one can deny the role of language in cementing the human minds for the welfare of humanity. The following trends about languages in India are noteworthy :—

— The official work in the most of the Union Government offices is being done both in Hindi (Official language of the Union) and English (associate official language of the Union).

— The official work in most of the State Government offices is being done in modern Indian language (regional language of the respective state) or Hindi

— English, which is associate official language of the union, has a great literary value as well as most widely used channel of international communication.

— With the advent of communication technology, new languages of computers are being invented and introduced.

— The languages which are being taught presently in the schools, colleges and universities is not producing citizens proficient in the studied language. They are unable even to communicate effectively either orally or in writing, what to say of excellence

— There is paucity of two categories of personnels : first, the persons efficient in teching three languages under the three-language formula and, secondly, the personnels who can translate the knowledge available in English and other modern foreign languages into Hindi and other modern Indian languages.

These trends compel us to give serious thought and take effective measures to develop multilingual competence in the future citizens of this country. In the light of the above requirements the teaching of languages in the schools, colleges and universities should be thoroughly reviewed. The teacher education in the case of languages may be entrusted to specialized colleges and institutes who may develop competence in at least three languages under the three language formula. In teacher education programmes, a basic knowledge of the languages of computers may be desirable as in future schools computers will be used on a large scale. The efforts may also be made to develop competent personnel who can translate the knowledge available in English and other modern foreign languages into Hindi and other modern Indian languages. This is very crucial for the progress in the field of science and technology.

The whole policy of education should aim at developing a properly planned system that is oriented, to meet the social and economic needs of the country and is accessible to masses instead of being restricted to elite groups. Efforts must be made to see that the principles, structures and strategies formulated through new education policy work in unison with each other harmoniously to achieve the desired goals.

Gujarat relaxes financing scheme for doctors

The Gujarat State Financial Corporation has liberalised its scheme for financing doctors. The Corporation will now provide loans even to fresh doctors with MBBS or BDS or equivalent qualification and the requirement for minimum 2 years experienced is relaxed.

In addition to loans upto Rs. 3 lakhs available for purchasing electro medical equipment, the Corporation will now grant finance for other equipment required by the doctors for professional use. Loan will be available upto Rs. 5 lakhs where construction of building is involved for housing equipment.

Loans in backward areas and under New Entrepreneurs Scheme for doctors are granted on concessional rate of interest and on reduced margin.

Benefits we derived from present education

S. Mukerji

Female literacy has increased tremendously with the result fertility rate has declined. There is also fall in the mortality rate. These, the author says, are the benefits of education. He feels education is not being accorded the required attention. But even then its scores so far are not too bad. In the context of the present debate on the education policy, the author calls for healthy and constructive criticism of the present education system.

A NATIONWIDE DEBATE is going on at present on the new education policy. People are expected to discuss it and the 'status report" prepared by the government is designed to provide the basis on which the new policy will be formulated. Commenting on the report the Editor of a national daily (Times of India) writes.. . .The main strength of the document is that it does not dodge the central issue, namely, the failure of the education policy of 1968 and the consistent slipping of performance behind target, plan after plan "Challenge of education" is indeed rutheless in its analysis of the education scenario of the country, whether in respect of the miserable status of India's primary schools or poor progress in female literacy ......" The Times Editor is equally critical about the progress and content of education in India. A question which bothers me is—Are we not over doing? It appears we are great experts in putting the worst foot forward. I have not yet read the status report, my knowledge on the gravity of the situation is based partly on the 70 odd lines appearing in the editorial column, and what we read elsewhere on the subject. However, I find quite frequently assessments based on incomplete information and unfair interpretation of the observed data.

Female literacy

Let us first take up the issue, "poor progress in female literacy" and examine it on the basis of Indian census data The Registrar General and Census Commissioner of India publishes "Literacy Tables" after each census, the latest being those on the 1981 Census of the country. Table 1, presented here is based on the census reports of 1951, 1961, 1971 and 1981—that is, the post-independence period In this table we present two points, namely:-

(i) the proportion of literate by age-sex in 1951 and 1981.

(ii) relative growth of literacy again, by age-sex in each five year period 1951—56, 1956—61, 1961—66, 1966—71, 1971—76 and 1976—81.

Table 1

Growth of Female and Male Literacy between 1951 and 1981 (India)

FEMALES

	Age Group	Proportion Literate 1981	1951	Rate of Growth in the periods 1951-56	1956-61	1961-66	1966-71	1971-76	1976-81
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel-I	5—9	2580	0604	2.190	1 543	1 322	1 244	1 280	1.219
	10—14	4485	.1417	1 614	1 380	1 441	1.306	1 238	1.192
	15—19	4329	1171	1 614	1 380	1 520	1 342	1 278	1.218
	20—24	3719	.1171	1 484	1 326	1 388	1 279	1 352	1 260
	25—29	3192	0863	1 567	1 337	1 288	1 244	1 509	1 337
	30+	1653	0601	1.366	1 268	1 366	1 268	1 329	1.248
			MALES						
Panel-II	5—9	3507	.1240	1 943	1 485	1 194	1 162	1 238	1.192
	10—14	6690	3085	1 516	1 340	1 263	1 208	1 193	1.162
	15—19	.6613	.3386	1 355	1 261	1 326	1 246	1 201	1.167
	20—24	.6655	3386	1 406	1 289	1 223	1 182	1 236	1 191
	25—29	6276	.3133	1 350	1 259	1.132	1 117	1 292	1.226
	30+	4680	2688	1 298	1 230	1.191	1 160	1 200	1 169

Source . Abstracted from "Growth of Female Literacy in India and Average Number of Female Children Born per Woman by Level of Literacy of the Women—A Census data Analysis covering 1951-1981" by S Mukerji and R. B. Upadhya, presented in *National Seminar on Status of Women and Fertility in India*, Annamalai University, 21—23 September, 1985

Future of India is in the hands of those who were below age 20 years in 1981, though they were governed, till recently, by people with average age well over 40 years. Columns (1) and (2) of Table 1 show that in the ages below 20 years, the proportion literate has shown remarkable increase in the period 1951 to 1981—a hooping 400 per cent for females and about 300 per cent for males.

Columns 3 to 8 of Table 1 show a much more encouraging scenario, namely, for each age and in each period the rate of growth of female literacy was more than those of the males And at this rate of differential growth we have no reasons to doubt that soon the females wi'l catch up with the males, may even surpass them, and males too will enjoy much higher levels of literacy. Can we call it a failure of the education system or education policy persued earlier ?

Fall in fertility rate

Let us examine, at least partially the impact of such growth of literacy on the population. Being a demographer by profession. I shall confine myself only to demographic indicators. Two important such indicators are fertility and mortality Based on 1972 and 1978 Sample Registration Scheme's (SRS) data, the author had shown in 1982, that there was a significant fall in the age specific fertility rate—ranging between 13 to 37 per cent in the rural areas. and ranging between 13 to 44 per cent in the urban areas of India for females in the age groups 15 to 44 years. Further, the reductions in the fertility rate for the two ages 15—19 and 20—24 were more in the rural areas compared to the urban areas. On the whole between 1972 and 1978, the percentage of women going for 3 or more child births decreased by about 18 per cent in the rural areas, and by about 27 per cent in the urban areas of India.

In the paper quoted at the bottom of Table 1 it has been shown that the average number of children born to women in the 25 years preceding 1976 were respectively 4.20 for all women, 4.46 for illiterate women and 3.09 for literate women in the ages below 50 years. The conclusions from these studies appear to be (a) the fertility is falling both in rural and urban areas of India, (b) the literate women have fewer children compared to their illiterate sisters—the difference can be almost 2 children, and (c) both increase in female education and the national family planning programme should be credited for these achievements in so short a time period.

Fall in mortality rate

In the field of mortality too the achievements are remarkable Recent press and other media reports say that in several areas of India, the crude death rate has already reached the level of around 7 deaths per 1000 population. Almost all research studies show that demographic improvements are closely related with social developments, and education, particularly female education, occupies an important place in such developments.

India's achievements in these spheres should not be brushed aside with contempt on the false premise that the published data are not reliable. It is equally true that much more could have been achieved for the same amount of investments in money and manpower,

that however, is true for all other sectors as well. Education and health are not receiving as much attention as some other Ministries enjoy. In spite of that, the scores are not too bad. Healthy criticism is good, if it is constructive, but at times some of the criticism are not really justified.

Lack of information, a constraint

Let me now briefly touch on the other aspect, namely, drawing conclusions from inadequate information. Recently I requested one of our bright students to collect information on the status of "vocational education". The idea was to collect from published matter the following :

(i) types of vocational education facilities in urban and rural areas Their number, staff strength, administrative control, in short, an account of the physical facilities for such trainings;

(ii) the number of male and female students who received such trainings by trade, each year; and

(iii) what are the employment status in the rural and urban areas for those who were trained earlier and the future prospects for such employments.

We did not expect to get much information on item (iii). This type of information is not readily available even for Bachelors of Engineering, so who will bother to compile and publish records for the graduates from the vocational schools ? But, we were not prepared to find very limited information on items (i) and (ii). In the Institute Library, we have only a few books and other materials on the subject. And it is an established fact that the Institute Library is one of the best in this part of the globe on population related literature. Now, it is difficult to believe that no information is being collected on such an important programme. But it appears that no arrangement has been made to consolidate that information and use it for future development.

We find the same state of affair in several other programmes. For example, valuable information is recorded by "Anganwadi" workers in their registers maintained at the ICDS centres. Same is true with registers maintained at the primary health centres One gets the impression that all those records are maintained for the purpose of auditors, and are not to be used for monitoring the programme, identify the bottlenecks and make the programme really effective. When the senior executives want some information we conduct a mini or large sample survey to collect it, when someone, somewhere, is laboriously entering the same information in a register. What do we call it "Catch 20" or "Parkinson's Law".

Investment in education vital

Education is of vital importance, it is as important as food, clothing and shelter. The cliche-India's population may be illiterate but not ignorant—have now no relevance. The population is definitely not ignorant and is getting progressively educated. The demand for education will increase. The planners will have to make provisions for all types of education. Cost-effectiveness and cost-benefits have no role here. It may cost more to produce a Bachelor of Sciences and it is quite likely that he will not get employment easily; but that should not prevent investment in his education. The benefits are elsewhere

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(*continued from page* 18)

Conclusion

The foregoing analysis reveals that the most of the units are financed by nationalised commercial banks and a large number of loans are given for plough bullocks. The average deployment of total loan reveals that the highest average loan is granted for gobar-gas plants and the highest average loan is deployed by co-operative banks for financing the lowest number of units and purchases. It is learnt from the analysis that the commercial banks which are meant for mass banking are fulfilling their aims as their share in total number of units helped and deployed loans is higher than their counterparts i.e. cooperative banks and regional rural banks. There is therefore an urgent need to improve the organisation and management of these latter financial institutions for the success of IRDP. □

Railway productivity touches a new high

The Railways have set new records in many key sectors of their operations, showing a new high in their productivity. Due to the efforts put in by railwaymen, the revenue earning freight loading achieved during the first six months of the current financial year has been about 120 million tonnes. This is about one million tonnes more than the target and 9 million tonnes more than what was carried during the same period last year. The Railways' performance in terms of net tonne kilometres which is the index of transport output is even better. It is about 5 per cent more than the target and 12 per cent more than last year's level. Similarly the "net tonne kilometres per wagon day" has also improved over last year by about 12 per cent, setting a new record for the six months period April-September this year

The Seventh Plan allocation for the Railways has been fixed at Rs. 12,334 crore and the current year's allocation has been increased from Rs. 1,650 crore to Rs. 2,050 crore. □

Tackling calorie-protein deficiency

Dr J. P. Deshmukh and P. G. Bhutey

In-take of the certain amount of calories is not sufficient if the protein content of the diet is missing. Oils are rich in protein. Annual requirement of oils per person is 20 kg. But in our country the availability of oil per person is around 5 kg. per annum. The authors feel, efforts should be made to make the optimum use of the available edible oils. Wastage should be minimised. Government should also give every possible encouragement to farmers to increase the production of oil-seeds.

NEXT TO PETROLEUM CRUDE, the major item of import for our country is edible oil. The need for the vegetable oil grows with the increase in the population as well as with the augmentation in the per capita income. Nutritional levels necessary in the diet decide roughly the potential maximum want of oils in the country. The requirement estimated on the basis of nutritionally significant threshold of 20 kg. annually is too ambitious as compared to the present meagre availability of about 6 kg per capita in India, that innovative strategies need to be urgently evolved for long-term planning to ensure requisite availability in the foreseeable future.

In this article, an attempt is made to provide an analysis of the nutro-economic factors prevailing in our country along with a model for generation of resources to better the diet of the common man.

Shortage of oils

The shortage of edible oils, and their consequent import, has strained our economy. The major portion of the oils imported is injected into the vanaspati industry, at subsidised rates. Apparently this keeps the pressure off in edible oil market. Since vanaspati is mostly consumed by the affluent, the mechanism of making available the oil much below the local market price and maintaining some sort of price control on its produce, however, needs careful examination.

It would be more rational, therefore, to charge an economic price for the imported oil, thus, removing the informal price control. The value thus generated can effectively be utilized for boosting of domestic oilseed production, by strengthening the infrastructure for oilseed development so making incentives attractive for undertaking cultivation.

In order that the cost burden of edible oil imports be reduced, definite corrective measures need be taken. It is necessary to examine the situation of supply and demand of edible oils in the country in the past decade as shown in Table I, below.

Table I
Supply and demand of Vegetable Oils

(million tonnes)

	1970-71	1976-77	1980-81
Supply	2 50	2 54	3.03
Demand	3.10	3.45	4.48
Deficit	0 60	0 91	1.45

Source : Gopalkrishnan R. Raw materials—Commercial aspects, J. Oil Tech. Assn. India 1982-83

The wide gap is likely to increase in the coming years. Even at dismal level of per capita consumption, it did remain steady at about 1.5 million tonnes by the end of the current decade, by taking all the opti-

mistic realisation of the centrally sponsored programmes into consideration in boosting the oilseed production in the country by providing the priority potential in the 20 Point Programme.

Export earnings through HPS groundnut has been a generative source of foreign exchange for some years. A very progressive trend is observed, especially during 1976-77, as shown in Table II.

Table II

HPS exports of Groundnut

(tonnes)

Year	Kernels	In shells
1973-74	73,540	9,145
1976-77	122,807	13,373
1979-80	22,776	349

Source: Monthly Statistics of the Foreign Trade of India, Vol. I, Govt. of India

Another route of resource generation for foreign exchange is the export of oilmeal extractions as given in Table III. The quantum and the value recovered through export is somewhat stagnant.

Table III

Export earnings through extractions

(Qty in lakh tonnes, value in crore Rs.)

Year		Groundnut Extractions	Cottonseed Extractions	[illegible] Extractions
1976-77	Quantity	[illegible]	[illegible]	[illegible]
	Value	[illegible]	[illegible]	7.7[illegible]
1977-78	Quantity	[illegible]	[illegible]	[illegible]
	Value	87.18	[illegible]	[illegible]
1978-79	Quantity	[illegible]	[illegible]	[illegible]
	Value	[illegible]	24.83	[illegible]
1979-80	Quantity	[illegible]	1.99	[illegible]
	Value	[illegible]	[illegible]	[illegible]
1980-81	Quantity	4.85	[illegible]	[illegible]
	Value	68.26	N.A.	[illegible]

Source: All India Cottonseed Crushers Association and the Solvent Extractors' Association of India

In view of the inexhaustive and competitive marketing efforts by soyabean producing countries, to promote the use of soyabean meal, an alternative strategy to construct a sizeable and assured world market share has to be evolved. It may be mentioned here, that a reliable supply of exports need be maintained.

Oils are nutritional

No oilseeds other than groundnut can fulfil simultaneously the energy and protein need required nutritionally. Although known to civilization for centuries oilseeds have been used as a principal source of fats and proteins only since the beginning of the present century.

The nutritional requirement of fat as recommended by the Indian Council of Medical Research is 20 Kg per capita per annum. The per capita consumption in India, however, including vanaspati has been much below the level, around 5 Kg. as shown in Table IV.

Table IV

Per capita availability of edible oils including vanaspati.

(Kg)

Year	Edible oil & vanaspati
1970-71	4.5
1975-76	4.3
1976-77	4.1
1977-78	4.7
1978-79	4.8
1979-80	[illegible]
1980-81	5.[illegible]

Source: Economic Survey 1981-82, Govt. of India

A greater attention has always been emphasised by the nutritionists, on the balanced requirement of calories, proteins, carbohydrates, vitamins, minerals and fibres in the diet as compared to oils and fats. However, the function of oils and fats in human diet is too well established to be ignored, especially with the dismal levels of consumption of oils and fats in our country.

Oilseeds are rich in both protein and fats. They are the reservoir of concentrated components in the diet of poor, since its calorific density is more than twice than that of proteins or carbohydrates. The nutritive value of a nutrient may be assessed from the body fat formed by the animal from 1 Kg of actual digested nutrient. Table V provides the body fat formed by various digested nutrients in the diet.

Table V

Body fat formed by the digestion of 1 kg. nutrient

1000 grams produce	grams of fat
Protein	235
Oil	598
Starch	[illegible]
Sugar	188
Fibre (digestible)	[illegible]

Source: Schwitzer, M K, Continuous processing of Fats, New York 1959, 87

To meet calorie deficiency

The highest caloric conversion rate in case of oil in Table V above, is worth noting. The essential fatty acids present in oils and fats constitute cell membranes. They are useful to the body to produce metabolites necessary in the regulation of muscles and the brain. Fatty acids play a vital role in immunity. Fats are the vehicles for fat-soluble vitamins and play an important part in the biosynthesis of several long chain alcohols necessary for transportation of sugars.

In absence of fat in requisite proportion in the diet, it would not be possible to find a solution to the problem of caloric deficiency of the vulnerable segment of the society consisting of infants, children and pregnant mothers. According to the data published by FAO the present quantity and quality of food supply in India is very low as compared to the other countries, as is evident from Table VI.

Table VI

Food supply per capita per day

Country	Calories	Protein (gm)	Fat (gm)
USSR	[illegible]	108 0	107 1
USA	[illegible]	104 3	166 2
Europe	3470	94 9	133 6
Australia	3310	98 6	129 7
South America	2560	66 3	58 0
Asia	2233	57 8	33 7
Africa	[illegible]	56 3	40 3
India	1971	48 1	29 3
WORLD	2568	69 0	61 6

Source: FAO Production Year Book 1976

Since essential fatty acids manage the membranes of living cells, their decreased availability can lead to unhealthy growth resulting in weak mental and physical strength.

The dismal per capita consumption of oil is an alarming situation shooting up as a menace to the health of the populace of India. An urgent need, therefore, is to examine its availability, through conventional and non-traditional sources, in view of the demand through teeming millions, increasing at an alarming rate in the country.

Decreasing production

Although during post independence period, productivity has improved in certain sectors, oilseed production did remain below expectations. It has become necessary, therefore, to improve the rate of growth, lest the situation deteriorates further. Oilseeds production, around 10 million tonnes, valued at about Rs 2500 crores, comprises the main agricultural segment in the country next to foodgrains. The average rate of growth of oilseeds during the period from 1952-53 to 1964-65 was 3 46 per cent which has declined to 1 62 per cent during the period 1967-68 to 1978-79. With the exception of First Five Year Plan, the oilseeds production in the country has lagged behind the target, as seen in Table VII.

Table VII

Production of Oilseeds in India

(million tonnes)

Plans	Target	Actual Production
First Five Year Plan	5 57	5 7
Second ,,	7 72	6 98
Third ,,	9 96	6 40
Fourth ,,	10 50	8 85
Fifth ,,	12 00	9 55
Sixth ,,	13 00	

Source: Sixth Five Year Plan

Hunt for protein continues and enters into new fields, with the growing demand of a greater world population, increasing the strain on inadequate supply of protein. In India, whereas in the decade 1960-70, production of rice and wheat increased, pulses, the chief source of protein, has remained stagnant and decreased on a per capita basis.

Tackling malnutrition

It rests on nutrition science which recognised requirements for nutrients aside from calories and described the physiological consequences of eating unbalanced diets with certain nutrients as a problem separate from the one of not having enough food (under-nutrition).

Protein malnutrition is difficult to define since the extremes are recognizable. It has been argued that often what has been considered a protein malnutrition problem, more correctly, is a total food problem. In these terms, people not only consume inadequate protein, but they consume less of all food.

The adverse effects of malnutrition, left unattended, are likely to be very serious. During the past decade, since the production of pulses has remained stagnant, evidently not commensurate with the increased population, it is likely to lead to malnutrition in larger portion of population. A search for new source of protein, has therefore, become necessary in view of the unavailability of the conventional proteins for the common man.

Protein helps tissue building of the body, and therefore, its presence is inevitable in the diet of human beings. It is now well established that the protein problem is essentially a caloric-cum-protein problem. The body's primary requirement is for the supply of the energy. The diet inadequate in caloric content shall make some protein components to be converted into a source of energy, thus, deviating from its principal function of growth. Protein, in addition to formation of body fat, also forms flesh, blood and milk etc. It is here, its significance in the diet lies. Its presence in the diet becomes crucial, when a body has to undergo the growth process. Needless to say, its inadequacy in the diet, results in retardation of the growth of the body.

Richest protein source

Oilseeds are the richest source of proteins varying from 20-40 per cent. Soyabean ranks top, from nutritional point of view. Although it can be consumed in several ways, it may take some time to become popular for its regular massive consumption, in our country.

Groundnut is the popular oilseed in our country and occupies a primary place in every common kitchen. Though it is consumed in various forms a more delicious form of it which is popularly known as "peanut butter". This butter, in addition to lysine, contains about 15 per cent of poly-unsaturated fatty acids (PUFA), which has the characteristic property of maintaining the flow of blood in the arteries and saving the skin from eruption. This butter is not only a cheaper substitute for pure butter or ghee, but a source of a definite quantum of extra proteins, that butter or ghee fails to provide.

The oilseeds are usually processed mostly for the extraction of oils. The residual portion of the oilseed, which is known as oilcake, in case of groundnut, contains about 50 per cent protein, which is being presently utilised as an animal feed, poultry feed and manure.

Better use of groundnut oilcake

The conventional use of the groundnut oilcake underutilises the protein present in it. The quality protein that the oilcake has can, after suitable processing, be upgraded for edible purpose. A requisite fraction of the aggregate supply of this oilcake in the country can be a substantial protein source, in a situation of acute shortage, that is evidenced by the present meagre per capita availability of it in the country.

Technologists have a task to remove constraints which act as barriers in the common use of the quality protein present in the groundnut oilcake for human consumption. Value added products, such as peanut, butter, fortified flours etc., should be popularised for improving the health of the masses. □

Developing biofertilizers

FULL SCALE efforts will be made to substitute or supplement chemical fertilizers and manures to meet the requirement of 200 to 240 million tonnes of fertilizer nutrients by the turn of the century.

The future development cannot be on fertilizers based on feed-stocks of petroleum origin because these feed-stocks are fast depleting and are non-renewable.

In view of the target to produce 30 million tonnes of additional foodgrains and 5 million tonnes each of additional pulses and oilseeds during the Seventh Plan, the fertilizer use is expected to increase by 66 per cent to the level of 140 lakh tonnes of nutrients valued at Rs. 10,000 crore.

Self-sufficiency in nitrogenous and phosphatic fertilizers will need additional capital investment of Rs. 7,000 crore during the Plan period.

The Government's policy is to assist the farmer with plant food from cost effective sources. It is, therefore, necessary to lay great emphasis on bio-fertilizers which are cost effective supplements to chemical fertilizers and can help economise on the high cost of developing the fertilizer industry.

Nearly two-thirds of farmers being small and marginal have no access to capital or credit to make necessary purchase of fertilizers. Bio-fertilizers can, therefore, offer an inexpensive method of providing nitrogen to the soil.

The Government has sanctioned a national project for the development of bio-fertilizers and already one national, and six regional centres as well as 40 sub-centres have been approved for the production of blue-green algae. These centres will produce 375 tonnes of rhizobium culture and 400 tonnes of blue-green algae providing about 46,000 tonnes of nitrogen per year for the crops.

The National Project also provides for transfer of technology to the farmers and researchers, for bio-fertilizers suitable for different locations. The inexpensive bio-fertilizer technology can be intensively adopted by small and marginal farmers.

At the present bio-fertilizers are visualised as supplements to organic manure and chemical fertilizers

Cultivation of leguminous crops like pulses, groundnut or soyabean could fix 60 kilograms of nitrogen per hectares for about Rs. 300 with the assistance of 500 gms. of rhizobium culture costing only Rs. 20.00. Rhizobium culture in the shape of powder could be used for coating seeds to help increase supply of nitrogen by biological fixation. In the case of wet land rice, blue-green algae can add about 25 kgs. of nitrogen per hectare at the cost of about Rs. 125.00. □

Faster power development in Seventh Plan

AN OUTLAY of over Rs. 34,273 crore has ben allocated for power development programmes during the Seventh Plan. The present indications are that a capacity addition of about 22000 MW would be feasible with these resources.

Efforts are being made to improve the operations of power supply industry and its financial working in order to raise additional resources. If these become available, they can contribute to the expansion of the power programme, particularly in the early part of the 8th Plan.

A programme of adding 4460 MW of generating capacity has been envisaged for 1985-86. A capacity of 14226 MW was inducted in the utilities during the Sixth Plan period. Despite the various infrastructure and financial constraints, it had been possible to increase the power generating capacity over 20-fold since the planned development began in the country. The country had also developed the capability of establishing thermal power plants with unit size of 210 MW and 500 MW and hydro plants of the capacity of 165 MW to 250 MW.

A] multipronged strategy has been identified to effect further improvement in the power supply position. The short-term measures include improving the performance of thermal power plants, timely commissioning of on-going projects, effective integrated operations of power systems, short gestation schemes, improving quality and consistency of coal supplies to power plants and adoption of demand management and energy conservation techniques.

The long-term measures cover acceleration of power development programmes on optimal pattern, emphasis on hydro and nuclear projects, greater central participation in power generation, coal beneficiation, diversification of fuels and modes of transportation of coal to thermal power plants. □

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More cheap blended cloth for common man NTC mills to increase production

FOR THE FIRST time the Union Government is taking effective steps to make available blended cloth to consumers at reasonable prices. To begin with, production of polyester-cotton shirting and trouser cloth will be undertaken by mills under the National Textile Corporation (NTC). If private mills join the new scheme, large supplies of these varieties of cloth can be made available to a larger number of people in the country, mainly the lower-middle sections of the society.

Under the scheme, NTC mills will get duty-free supplies of polyester fibre. The aim is to sell the blended cloth (48 per cent polyester and 52 per cent cotton) for shirting at about Rs. 20 a metre and for trouser—a heavier variety—at nearly Rs. 40 per metre.

The scheme for making available durable fabrics at 'affordable' prices to the consumer has been formulated by the Department of Textiles in the Union Commerce Ministry in accordance with the wishes of Prime Minister Rajiv Gandhi.

Mills under NTC have to increase the production of blended shirting and trouser cloth from the present level of 24 million square metres to 80 million square metres in the current financial year itself. Of this, 8 million square metres would constitute cloth under the existing scheme, another 8 million square metres for supply to Government departments through the Directorate General of Supplies and Disposal (DGS&D) and public sector undertakings, and the balance 64 million square metres will be for the open market.□

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Decentralisation and social change

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Spotlight on dryland farming

NEXT ISSUE

Rural banking for development

Oil Production to go up during Seventh Plan

THE CRUDE OIL production is proposed to be increased from the present level of 30 million tonnes to about 36 million tonnes by 1989-90. In the first half of 1985-86, 14.3 million tonnes of crude oil was produced. ONGC and Oil India have been asked to take special measures to improve production from the North-Eastern region where there was some shortfall in production.

The Planning Commission has allocated Rs. 12,623 crore for the petroleum exploration and refining sector. Out of this, Rs. 5702 crore has been made available for exploration and production of hydrocarbons. It is expected that suitable outlays will be approved in due course to achieve physical targets.

The outlay for the total oil industry was Rs. 12,936 crore. Apart from exploration and production of oil, some of the important schemes proposed to be executed during the Seventh Plan include the Hazira-Bijaipur-Jagdishpur gas pipeline and the additional secondary processing facilities in Gujarat refinery. □

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Decentralisation and social change, the Indian model !

Dr. G. N. Seetharam

In this piece, the author seeks to establish the linkages between democracy, decentralisation and social change through the prism of Indian and international political economy. The basic thesis of the piece is that if the evolutionary model of social change, which India has adopted, has to be safe guarded there is the imperative of political, social and economic decentralisation. Unless we do it immediately there is a possibility, though quite distant, that forces which believe in violence as the dominant instrument of social transformation might gain ascendancy.

THE INDIAN MODEL of development with its commitment to gradual change, democratic institutions; a pluralistic political structure, co-existence of private public sectors is probably the greatest political experiment carried out in all times. People of various races (Indo-Aryan, Dravidian, Tibeto-Burmans), linguistic groups, and religious totalling about 1|6th of humanity have mingled together over a continent and are by and large settling the process of development through free debate, compromise and conciliation. During the last 40 years India has witnessed a social revolution in an evolutionary set up of an unparalleled dimension. This revolution has been multi-dimensional; it has been political in the sense that the institutions of parliamentary democracy and universal franchise based on freedom of expression and respect for the dignity of the human-being have taken root in this land. Parliamentary democracy itself was the end-product of about a thousand years of political evolution in Great Britain. But that great process has been with substantial success transplanted on to Indian soil in a historically short period. What is more, a largely illiterate electorate has time and again astounded the World with its grasp of issues. The Indian electorate has thrown overboard the myth that democracy is only for the rich, the myth that poor people under-estimate freedom. The 1977 elections dramatically demonstrated to the World beyond any semblence of doubt that the poor of India value political liberty. India has built up a political structure which is the envoy if the entire world. In comprision to other third-world states which gained independence in the post-war period and are mostly afflicted by chronic political instability of a structural type leading to coups, counter-coups and parodies of revolutions. India has stook like a rock of stability which does not preclude dynamic social movements. The largest electorate of the World votes in and out governments of its choice, a privilege alas few countries in the world have ! Under these conditions of liberty and respect for human dignity great material and social progress has also been achieved. The institution of caste which had an iron grip on Indian society throughout its history has weakened considerably. The caste hierachies or ritual have been upset by the breath-taking economic and social progress of the middle castes. There is evidence that since the 70s the Scheduled Castes and Scheduled Tribes are also becoming conscious of their rights under the Constitution. Untouchability has been banished from the country. Women have made considerable strides. Their literacy rate has gone up considerably and today one can find in Urban India any number of women in the professions, in politics, in sports and

every other field. As a class they are becoming more assertive. The laws are becoming more progressive and the time has come when they have almost attained legal equality with men in most aspects (this unfortunately does not apply to Muslim women). Religious minorities in this country have more freedom and opportunities and in spite of communal riots are better treated than religious minorities in most parts of the world. For example—while in neighbouring Pakistan millions of Hindus and Sikhs were driven to India, virtually emptying that country of minorities, in this country minorities have largely prospered. The Parsis have a living standard much above the average Indian and have made great contributions to all aspects of life in the sub-continent. Many of India's big business houses belong to minorities—Parsis, Jains, Sikhs. The same applies to Christians as well. The only minority which has not caught up with change but largely lives in a Rip-Van Winkle world of medieval backwardness are the Muslims. This may be because of their own value systems reinforced by a vacuum in secular leadership. The values of secularism, socialism and democracy, in spite of sporadic questioning here and there, have found universal acceptance in the country. The acceptability of secularism has been reinforced by the great tolerance of the Hindus who did not go by the logic of partition. No country of comparable size has shown so much accommodation of the minorities as the Indian mainstream has.

Economically, the sub-continent has made considerable progress. A country where even pins were being imported 40 years ago today sets up nuclear reactors without foreign collaborational A giant R & D net work has been set up. The country has been seen a quantitative revolution in education. The number of literate persons in India is larger than the population of any country in the world barring China. An industrial base has been created which has catapulted the country into one of the major industrial powers of the third world. Branches of industry unknown to British India have been set-up. Industrial output over the past four decades has gone up about 5-6 times as compared to the pre-independence period. Indian scientific capability is unmatched anywhere in the third world and matched only in a few advanced countries. In Agriculture production has more than trebled and the country has basically achieved self-sufficiency in foodgrains. Per capita availability of food has kept pace with population growth. Population has more than doubled in four decades but the spectre of famines (large scale) has been banished in the country. The rural areas in many parts of the country have been transformed beyond recognition. Diseases like plague, cholera, malaria, smallpox, etc. which used to devastate rural India, have by now largely been controlled. Longevity has gone up from less than 30 years to over 55 years. (Longevity in the Soviet Union, an advanced communist country, is 61 years). Schools, hospitals, allopathic medicines, community centres dot the countryside. Significant starvation is not possible any more thanks to buffer stock arrangements. There are about a quarter of million tractors in the countryside today compared to a virtual absence before independence. The production function in parts of Indian agriculture has dramatically changed. Almost 10 million tonnes of fertilizer is used in the country today. Consumer goods like chappals, watches, fine cloth, motor-cycles, etc. are today in common use in rural India. The communications revolution has come to rural India with the transistor explosion and the T.V. revolution has just started. A magnificent transport network has been built in the country. Most villages have metalled roads and more than 3,00,000 villages are electrified today as compared to virtually none before independence. About 20-25 million hectares of land has been brought under irrigation which is uncomparable to any other country in the World.

Indian and Chinese experience

On the whole the economic growth rate of the subcontinent over a period of 40 years of independent development has averaged at about 4 per cent compound taking into account the spurt in recent years). This amounts to about 2 per cent per capita compound rate of growth over 40 years. Historically it is excellent keeping in view the fact that in the first half of this century, going by all evidence, there was stagnation. As compared to other countries of South east Asia like South Korea, Taiwan, Malaysia, etc. it is rather low, but one must bear in mind the continental dimensions of the country. India's population almost equals the entire population of Europe including the USSR with a land area which is 15 times smaller. Even the additional increment every year to the Indian population is about 16 million which is more than the population of 100 member states of the U.N. The only country with which the Indian development experience could be compared is China. China's model was and substantially is totalitarian and authoritarian with the people having no free choice to select their rulers. Human freedoms as understood by democrats have little relevance there. The party decides what is best for the country and mobilises the population. There is no question of dissent. So there is a qualitative difference which makes the Indian and the Chinese experiences qualitatively different. Even purely in techno-economic terms, there is no substantial evidence that China has done significantly better than India. Famines still occur in China in which hundreds of thousands die. The general technological sophistication of the Chinese economy seems to be considerably lower than India's. Large parts of China are closed to foreigners, so it is difficult to believe that what one sees in Peking or Shanghai is the model of what exists elsewhere in that country. India being an open society does not hide its wounds. Any foreigner can go round with a Camera to the worst of our slums and record misery but that is not possible in totalita-

rian countries. The new economic policy adopted by the Chinese leadership recently along with the statement that Marx is out-dated does give a clue to the fact that serious reverses must have occurred there if such afundamental rethinking about the basic postulates of that society has started. On the basis of the observations of many China watchers, including J. Uppal. J. K. Galbraith, the recent multi-volume World Bank report etc., one comes to a tentative conclusion that China has started toddling towards a mixed economy model with encouragement to private enterprise. Of course it is too early to talk about an end to the monopoly of power held by the Communist party and the nascent smell of a pluralistic political order. What will be the future political forms of Government in China it is difficult to say, but one can clearly foresee a decade or two of incremental change which may or may not lead to a structural change. In limited areas China seems to have done better than us, like literacy (reported at 80 per cent though till recently literacy was limited to Marx, Engels Lenin and Mao). Visual evidence points to their urban areas being free of slums but then again one does not have the freedom to move to urban areas in China because of the internal passport system. An average Chinese looks healthier than the average Indian. The main point sought to be made is that alternate authoritarian models which have suppressed liberty in the name of economic growth and prosperity do not really seem to have done significantly better even in that narrow sphere. If one adds the fact that racial and religious minorities in the regions of Tibet and Sinkiang were recently being forcefully 'sinicized' by the Han majority, the full impact of the alternative supposedly egalitarian model becomes clearer.

The story is worse in the Soviet Union where seven decades after the revolution and the death of tens of millions in purges and counter-purges and class 'annihilation' and after indescribable human suffering and regimentation, they have to import food to feed parts of the country. In fact the poorest people of European stock ("poor whites") live in Russia which in terms of resources is probably the richest country in the World. The excuse of the 2nd World War will not wash since Western countries like the Federal Republic of Germany saw equal if not more devastation and nuclear weapons were used on Japan. Both these countries have left the USSR far behind. So while totalitarianism seems relatively efficient in fighting wars, erecting factories in record time and probably in satisfying the basic biological needs of its population, it does not have the dynamism of bringing in constant technological revolutions which are generated in the western world, guided by a spirit of free inquiry. So, on the whole the Indian development record is not very badly off even in terms of economic growth and welfare compared to the supposedly high speed 'food more important than freedom' models. But it is true that about 2|5ths of Indian population is under the poverty line (in China it is estimated at 1|5th) and urgent measures must be taken to lift them above the line to give them a measure of human life in the last quarter of the 20th century. If we succeed in doing that we shall be one of the few societies in the World offering total political freedom to the people while at the same time guaranteeing at least economic subsistence. By that, the correctness of the broad features of the institutions which dominate our model, and the policy choices of gradual change in a pluralistic political framework with the ballot box becoming an instrument of social change, and even transformation, in an evolutionary framework, will stand vindicated within the country and worldwide. The Indian experience might well emerge as the most attractive choice for the turbulent world of Asia, Africa and Latin America. To achieve that and see that the disadvantaged reap the benefits of growth and development, it is necessary to integrate them into the system. The lower classes, castes and regions have to share the fruits of development and for that it is necessary to have programmes and projects specifically suited to them and formulated by their initiative and administered by them. This logically makes the case for decentralisation. Planners and Policy makers sitting in New Delhi, or for that matter the State capitals, cannot be expected to conceive and perceive the various situations and needs of local communities in local areas. Economic and political power should percolate and integrate the grassroots. Popular programmes of economic change must be tailormade for regions and marginal groups at the local level with a great deal of imagination. This does not mean that at the present time the configuration of social forces in the countryside is such that programmes of economic and social change will automatically be more effective if its formulation and implementation is left to the regional and sub-regional levels. Experience of other third-world countries put together in a World Bank report does not support the view. But in India there is the historical precedent of many institutions at the field level like the Panchayati Raj, Co-operatives, etc. effectively captured by the upwardly mobile middle castes. There is no reason why once the SCs|STs and other poverty stricken groups become more politically conscious and aware of their economic interests, many of the institutions cannot be made to serve them by the sheer force of universal franchise. It is only by integrating the weaker sections and regions that the Indian model can become a permanent beacon light to the rest of the World and that requires effective strategies to co-opt the disadvantaged into the portals of accommodative politics and economics and turn this country into a citadel of liberty, human dignity and progress. And for that imaginative action is required which will be sharing economic and political power with the marginalised groups of population which is what effective decentralisation is all about. In short, effective decentralisation may be a

challenge to our structure of accommodation, conciliation, and compromise and in successfully meeting the challenges we shall have effectively isolated those marginal political groups which, pushed by impatience, look to violence as a panacea for deep rooted problems. The young minds are bound to look for 'quick fixes' and violent change may appear deceptively seductive. So that such groups don't get a mass base, effective decentralisation which will sensitize the administration, body politics and the economic system to the needs and aspirations of the have-nots (economically), ethnic minorities (tribals) and dissident sects (e.g. Sikhs) is needed and once these groups and strata are integrated in the mainstream, Indian democracy will insure itself against violent internal upheavals and spread and deepen the culture of genuine political democracy which as experience shows is conducive to gradual and even slightly accelerated change. Herein lies the raison d'etre of decentralisation.

Significance of the Indian model

The success of India's democratic social change or evolutionary revolution has significance beyond India. The reverberations of the success attained so far is already being felt the world over especially in the third world. The Indian model demonstrates that significant social transformation can be brought about in a continental and largely illiterate population without recourse to organised violence. It also demonstrates that significant economic growth can be given impetus in a democratic social order within the third-world setting. It demonstrates that the institutions of democracy can, in a historically short period of time, be absorbed in non-western settings. It also demonstrates that a social order carrying the weight of centuries can be significantly altered to suit modern times without massive blood letting. Examples for this are: (a) the abolition of Zamindari, (b) abolition of untouchability, (c) upgradation of the role of women in Hindu law, (d) Universal franchise, (e) affirmative action for SCs and STs, (f) the creation of linguistic states, (g) abolition of the privileges of former princes, etc. Indian democracy is already the envy of most third-world states and is held in awe even in the west and in the Soviet Union. The only factor blackening its near universal appeal is the significant pockets of poverty that still dot the country. For the appeal of Indian democracy to get teeth and further credibility as an ideological alternative to authoritarian models of resources mobilisation and growth, both of the right and the left variety, it is very much necessary that poverty be banished from the country and a reasonable degree of relative prosperity (by Indian standards) be built up for the entire population. The resources and the potential for a poverty-free society by the beginning of the 21st century is very much there even for a billion people which will be India's population by that time. But the problem is that centralised models flawless in technical terms will not work in this vast subcontinent. What is needed is sensitivity to the aspirations of the have-nots, the dispossessed and this sensitivity is alien to bureaucratic structures. The people must be mobilised through democratic means and building a healthy rural power structure in this gigantic task of social transformation and nation building. For this local structures of power like the Panchayati Raj and even state governments must be revitalised. Even distorted and for a time hijacked by vested interests, democratic bodies are preferable to technocratic and bureaucratic approaches which might work wonders in a Singapore or Hong Kong but will be hard put in the Indian subcontinent. Once reasonable economic prosperity and power sharing between castes, communities, classes and strata are brought about in rural India through the democratic process, the second half of the 21st Century may be the harbinger of an 'Indian Century'. In a long historical sweep the objective of our policy makers should not be just that India must emerge strong enough to defend itself against any power (i e. removing the external potential threat to our democracy) but see that New Delhi emerges as a strong centre of ideological affinity for the peoples of the third world. On that will be based a strong Indian role in World affairs due to us by the virtue of our size, resources, ingenuity in deflating tension and orchestrating gradual development and the spirit of liberty. Our role in World affairs must be comparable in the long run to that of the U.S., U S.S.R., and China. It may be noticed that each of the above countries have a strong ideological attraction (though waning) among segments of public opinion the World over. In winning the admiration and sympathy of the third world for a unique model of development based on the Indian genious for assimilation of foreign ideas (beginning from Hinduism itself) lies the emergence of India as a strong factor on the world scene. And in this unfurling of history decentralisation has a significant role to play. It is only by respecting local autonomies, local cultures, local idiosyncracies, local mysticism and may be local unreason that a continental, secular, democratic India wedded to broad egalitarianism will emerge and it is in this emergence lies probably the hope for strife and violence torn mankind as a beacon of peace, prosperity and progress coupled with respect for individual initiative, specificity, dignity and enterprise.

The power structure in India

Since Independence the face of economic and political power has shifted in the country through the democratic process. As already mentioned the upper-tier of the feudal class was heavily hit by the abolition of Zamindari and princely privileges. It so happened that members of this class also generally

happened to be from the upper castes. Large amounts of land have passed to the middle castes. The middle castes have also emerged as a powerful political force especially at the State level. Many State governments are dominated by them. Further deepening of land reforms are being scuttled by this land-owning middle caste. The green revolution has brought in a lot of money into their hands and they have started investing in urban areas. Several entrepreneurial groups like the Kammas in Andhra Pradesh are emerging from amongst them. The basic contradiction in much of the Indian countryside is not between the top castes and the scheduled castes as between the middle castes and the Harijans and tribals who are by and large landless and who are labourers. Most of the people under the poverty line are also amongst them. The local power structure and the social atmosphere of the rural areas in large parts are dominated by the middle castes whether it is the Jats in North-west India, the Kammas, Reddies, Lingayats and Vakkaligas in South India. They are also the emerging commercial farmers of the countryside. In sum, their economic and political clout based on access to land and partly due to numbers is great. They have extensive linkages with the arm of the Government in rural areas and are successful in hijacking Panchayats, co-operatives and other institutions to serve their interests. Caste linkages and commonalities are rather strong and based on endogamy. They are also claiming superior ritualistic status in the Hindu Varnashrama and sanskritising themselves by adopting the cultural practices and rituals of the castes they have largely overthrown in large parts of rural India, i.e. the Brahmin-Bania combine. Having acquired a mobility of status and power they are bent on consolidating it. It is very difficult for government programmes (Central or State) directed towards the Harijans and other poverty stricken groups to succeed given the dominance of the rich and middle peasant|middle caste combine. Much of the benefits of the special programmes meant for the poorer sections|SCs and STs have been appropriated by the dominant castes and classes. The evaluation reports of the Planning Commission itself is a testimonial to it. In order that the have-nots take advantage of special programmes meant for them they should be organised and their political consciousness awakened. It was in the early 70s that Mrs. Indira Gandhi with the slogan 'Garibi Hatao' was able to focus the poor at the Centre of the Planning process. That has to be carried further by mainstream political parties or we shall witness the spectre of groups and sects wedded to violent change gain ascendancy amongst them as has already happened in parts of Andhra Pradesh, West Bengal, Tamil Nadu, etc. In the long run the integration of the disadvantaged into the mainstream—culturally through sanskritisation, politically through the democratic process and Panchayati Raj and economically through anti-poverty programmes and institutional changes lik land reforms—is in the interests of political an economic democracy in the country and the oper tion of the mixed economy model. History is witness to the fact that these elites who have i time refused to give up little are in the end force to give up everything. There is need for statesmai ship especially at the State level to see that tl have-nots cross the hump. The hurdle is that the level of many states the middle class|caste coal tion made up of dominant peasant castes, has strong-hold over the governmental machinery. The also perceive their interests in a short-time fram work. In order to break the back of these coal tions it is necessary to reinforce alternate coalitio basing themselves on the scheduled castes and trib as well as the upper castes|caste who are also at tl receiving end of middle caste pressure. This mobil sation was tried by Mrs. Gandhi with considerab success in Gujarat (KHAM) coalition, Karnatal and other states. Once the disadvantaged are polit cally mobilised to play the game and make use the system, decentralisation of economic and poli cal power to the State and Panchayati levels w almost automatically see to it that the benefits the anti-poverty drive go to those to whom it is ad ressed. It is also conceivable that such urban-ru coalitions will be far more sympathetic to instit tional change like land reforms which is the centr aspect of struggle in the country-side.

Once political change coupled with decentralis tion and autonomisation of anti-poverty programm are brought up together, the process of genui rural development within the framework of dem cracy can be brought about. Such a developme will also isolate those forces who are strategical wedded to violence as also those who in all pr bability only tactically acknowledge the legitima of present mainstream politics with a view to gradu subversion. Once all social forces, castes and class see opportunities for social mobility, however. lim ted, the anti-system movements which are alrea marginalised will remain a peripheral force to tl central themes of Indian democracy. Along wit this, decentralisation will in all probability lead to more enthusiastic acceptance of the family planni programme which is again of central importance i keeping social change manageable and within th parameters of democracy. Otherwise the system ma crack under the sheer logic of numbers in a count with limited land resources. Decentralisation als has relevance to the new ecological equilibriu sought to be established in the countryside. It ha also a lot to do with bringing literacy to eve home.

In the urban areas also economic power, especiall in private industry, is concentrated among few com munities and ethnic groups. This is a potentiall explosive situation and must be defused by buildin

up a second-tirer of local elites. For example much of organised private industry and trade in Eastern India is in Marwari hands. In order to defuse potential anti-Marwari movements coming out of a feeling of deprivation it is necessary to encourage entrepreneurs of local ethnic groups in small scale industry and trade. This work is already being done at the State Government level but needs to be reinforced. In Western India, for example with Bombay as the foci, the kingpins tend to be Parsi-Gujarathi-Sindhis. Here there is need to encourage entrepreneurs of the local linguistic community and so on. This would lead to a certain decentralisation with the urban areas and also create a stable all India business elite with superstructure of a few ethnic groups operating throughout the country and with a base of state level local entrepreneurs at the regional level. Every state must have an institute specially charged with identifying and developing entrepreneurial traits among sections of the local population who may not be gifted with it As McClelland's experiments show entrepreneurship is nature and nurture. While there is little we can do regarding nature we can certainly do a lot regarding nurture. At the level of bureaucracy and R & D also it is advisable that it should not be the monopoly of a few castes but people from all communities be represented there. This need not be done through reservations since we will be killing merit but by upgrading government schools in the countryside, and the urban areas to an extent that young people from these institutions are in no way inferiorally schooled as compared to public schools and elite oriented other institutions. Even here, if imaginative programmes of educational decentralisation are launched it is possible to do a lot. The most important aspect of all these changes will have to be brought about by a value revolution. The old values are crumbling and the new values have not yet taken over. We are living in a bastardised age. It is through the educational system, the media and the entertainment industry that our new generation can be brought up on the values of democracy, human dignity, individual choice, motivation to achieve, amenability to change, secularism, scientific temper and a broad egalitarian spirit which lionises human fraternity and national patriotism. In bringing about these values and building up a new Indian personality, patriotic to the point of the broader loyalty to the Indian nation, transcending narrow loyalties of caste, religion, region, etc , a democrat to the core, a believer in relationship between the ends and the means, sensitive to deprivation, we shall be building up the ultimate guarantor of Indian democracy. And for this to happen it is very important that local communities have substantial control over the organisational component of the education system and the media.

Decentralisation and removal of poverty

Many of our anti-poverty programmes have failed in making more than a marginal dent in the problem. The latest "Wunderkind" is the IRDP. This programme which was in operation in the 6th plan was expected to work wonders towards our way to povertyless society. But unfortunately it does not seemed to have been so successful though it must be admitted that inspite of Prof. Rath's conclusions, a large number of people have been helped. The reason that anti-poverty programmes are not delivering quality goods is due to the fact of the alliance between the lower echelons of the bureaucracy where corruption is endemic and the rural power structure. Poverty is a social problem, a political problem and an economic problem. Once this is accepted, it follows that anti poverty programmes should not be approached in a technocratic manner. Indian villages are not in the 21st Century. In fact many of them are not even in the second half of the 20th Century. The approach of many of the centralised agencies including NABARD and the entire financial system as well as some government deparments is bureaucratic-technocratic. They have little appreciation of the sociological, economic and cultural dynamics of social change and more importantly most of them are city-bred 'foreigners" to the rural environment The very procedures of these organisations is anti-change. They intimidate the villagers with all their forms and procedures Being bureaucratic organisations they are staffed by many people who do not have commitment to anything in their lives except their salaries. Change can only be brought about by sensitive. empathising and helpful individuals who have the feel of the local environment. Of course some bureaucratic institutions may be inescapable but they should work in co-ordination with the local organs of democracy like Panchayati Raj etc. It is preferable that they even have a degree of subordination to local democracy A few years ago there was the myth that local institutions are hand-maidens of vested interests and that led to a proliferation of centralised agencies administering 'development'. But the functioning of most such organisations not only in India but throughout the third world shows that by and large they become closely allied with the rural rich. The solution lies in democratising the local organs of democracy by including statutory representatives of the SCs|STs, women and other disadvantaged groups. Even an imperfect democracy, which very distortedly and skewedly mirrors people's opinion, is preferable to bureaucracies which, in the Indian context means especially at the lower echelons many of whom are non-performing parasites drawing rent from the government for their attendance and totally desensitised to anything other than their D.A. question. So effective anti-poverty programmes require grassroot democracy. At the moment our Panchayathi Raj is a sick industry. Health has to be pumped into it. Also, a real transformation of the countryside cannot be brought about merely with stop-gap arrangements like anti-poverty programmes, which though important treat only the symptoms. They must be accompanied by change in production

relations in the shape of land reforms which will give at least some land to the landless, tenancy security and consolidation of holdings. Our land ceiling act has become a hoax. If laws and acts are allowed to lose their credibility, the legitimacy of democratic institutions will suffer and there will be an erosion of values and institutions. Bringing about genuine land reforms is easier said that done. Some schools maintain that within the countours and parameters of our present system, having in view the co-relationship of forces, it is an impossibility. In our view the situation is not that bad. Given the political will to take India into the 21st century as a prosperous society and a commitment to an integrated democratic society it is not impossible. To make this possible is one of the most serious challenges to the flexibility of the institutions implanted in India; institutions of democratic choice which have successfully deflated social tensions in many areas. In it may lie one of the most serious tests to the resilience of Indian democray. As regards the specific programme like IRDP, even when the benefit is derived from the dispossessed, it is unrealistic to believe that a landless labourer can be turned into an entreprenuer overnight without the ethic of entreprenuership. Only a multi-pronged approach involving the whole village community, and through mutations bringing about institutional change, accompanied by an educational revolution and renaissance of rural democracy, can create the atmosphere which will be conducive to the integration of the rural community largely on a private property framework and egalitarianism towards the dispossessed. We should also give attention to developing a cadre of rural managers who are from the rural areas and have a commitment to remain there to bring about or at least absorb technological change and innovation which should supplement institutional change. In the percolation of democracy to the village level in a meaningful manner lies the answer to India's rural cauldron As the eminent scholar and keen observer of the Indian rural scene P. C. Dube has observed, "The prognosis for the future, I am afraid, is not very cheerful. More food is being produced but levels of malnutrition remain unchanged. Agrarian unrest is increasing in volume and intensity. Very soon it may acquire un manageable proportions. The inegalitarian social order continues to prevail The landed gentry is asserting itself with an enhanced political consciousness to protect its entrenched interests. The situation may lead to intensification of conflict. This calls for rethinking on our entire strategy of land reforms. Economic growth is an imperative, but it cannot ignore the demands of social justice. If we wish to avoid chaos and confusion we must reflect and act. Time is running out".

The kind of measures we have charted out earlier will reduce the probability that anti-system extremist groups wedded to violence, will take control of rural areas. Bringing the have-nots above the po[
line may do wonders for the work ethic also. T[
is evidence that the lethargy and "other worldli[
of poverty stricken groups is a consequence of [
nutrition. Some extra milk may eliminate the "Ph[
ophical" attitude to life and make them vigorous
hard working.

On the whole as Prof. V. K. R. V. Rao has m[
"Decentralisation for development with social ju[
and people's participation constitute the gr[
challenge to both the theory and practice of dev[
ment". [2] One must also have in mind that de[
tralisation is not a "quick fix". It is a way of [
lopment 'Bottom-up'. Local democratic organs [
be seen not as recipients of orders but cha[
through which the aspirations and needs of the [
communities become known to the capitals. [
Indian state must stop being a "Soft state" a la [
dal and demand performance from its bureau[
and fix accountability.

Concluding Rem[

If we are successful in carrying out the packa[
measures, there is no doubt that democratic dece[
lisation will herald Indian society towards a W[
state The future of democarcy in India will be s[
internally. ☐

New monetary incentive for famil[welfare

The Union Ministry of Health and Family [
fare is considering to provide continuing mon[
benefit of Rs. 50 per month to the acceptors o[
minal methods after two children for a period o[
years. This will be operated through the natio[
sed banks and post offices.

This scheme could not be taken up so far d[
financial constraints. If this scheme was to be [
plemented, it would have involved an expend[
of Rs. 2766 crore during the Seventh Plan pe[
The total outlay for the Seventh Plan period fo[
Family Planning is only Rs. 3256 crore.

Block-level planning to fight backwardness

Dr. (Mrs.) Hemlata Rao

The author feels that a general policy on development of backward regions has resulted in wide disparities. She emphasizes that to reduce the disparities, block-level planning must be adopted. Because, according to her, each block requires a different strategy for development because of its different milieu and special local needs. She supports her argument with facts and analysis.

IN THE RECENT years there has been a shift in the emphasis from overall planning for GNP growth to planning for the growth of backward regions. But the efforts in this direction are mere extention of macro-level plan methodology to the development of the micro regions. This is not an appropriate strategy. A separate strategy is need for the development of each region The strategy for developing backward regions should originate from the growth imperatives of these regions and should aim at exploiting their growth potential so that there is a simultaneous rise in income and its equitable distribution within the region and among the socio-economic groups. The purpose of this paper is to suggest a strategy that is appropriate for developing backward regions in the above perspective.

Evolution of block typology on the basis of some measurable economic characteristics is a difficult task indeed. From the available data for Karnataka, it was possible to measure the levels of development of 175 taluks (blocks) of the State and to identify various dimensions and typology of development in various taluks. By dimensions of development we mean the development that is taking place in a number of sectors within a region Thus a region can have total backwardness or uni-dimensional development or multi-dimensional development. The analysis of dimensions helps a planner to adopt differential strategies for sectoral development within region. By typology we mean the type of development a region is having e.g. agricultural development or industrial development and so on.

Wide disparities

To develop our empirical model identifying differentially developed regions, 85 indicators were selected and they were put under the following 10 groups ·

1	Agricultural sector = X1	Productive Sectors
2	General Industrial sector = X2	
3	Small Scale Industrial sector = X3	
4.	Education sector = X4	Social infrastructure
5	Health sector = X5	
6	Transport sector = X6	Economic infrastructure
7	Communication sector = X7	
8	Banking sector = X8	Financial infrastructure
9	Cooperative sector = X9	
10	Power sector = X10	Economic infrastructure

For each of the sector separate composite indices were computed by using the method of factor analysis and thus 10 composite indices were derived. Later on these 10 indices were pooled together by the same method of factor analysis and one composite index of development was derived The equation derived was :

$$Z_i = 914\,X1 + 918\,X2 + 554\,X3 + 848\,X4 + .375\,X5 + 948\,X6 + 820\,X7 + 872\,X8 + 439\,X9 + .722\,X10 \quad (1)$$

Z_i = Composite index of development & X_i = the above mentioned 10 sectors.

Based on the factor Scores obtained by each talukas, they were classified according to their levels

of development, into the following ten groups

EXHB = Extremely Highly Backward
EB = Extremely Backward
HB = Highly Backward
B = Backward
A = Average
MD = Moderately Developed
D = Developed
HD = Highly Developed
ED = Extremely Developed
EXHD = Etremely Highly Developed

The study reveals that in Karnataka, out of 175 taluks 106 are below average or backward. 15 taluks are average and 33 are moderately developed. The 21 developed taluks are in general metropolitan areas. The development in the State is concentrated in and around a few metropolitan areas. Not only is there lop-sided development in the State, but also the extent of disparity is acute. The range between the index value obtained by the most developed taluk viz., Bangalore North (196.12) and the most backward taluk of Jewargi with an index value of —10.65 indicates the magnitude of disparities.

It may be observed from Table 1 that out of 9 EXHB taluks, 8 or about 89 per cent of this group have total backwardne.. and only one taluk has uni-dimensional development. The percentage of taluks having total backwardness or uni dimensional development declines as the level of development goes up. Thus the percentage of taluks having total backwardness is 42 per cent for EB group, 20.21 per cent for HB group and 11 per cent for B group. For the remaining groups, except for A group, total backwardness and uni-dimensional development are absent.

On the other hand total development and uni-dimensional backwardness are about 80 per cent for ED and 100 per cent for EXHD groups

Dimensions of developme

As the level of development declines, dimensi of backwardness increases. It implies a direct a positive relationship between the levels of devel ment and dimension of development. This brings fo the inter-dependency of various sectors in the proc of development and hence the importance of in grated regional and sectoral development strate Regional development strategy should be such t development of one sector helps and leads to development of the other sector and in this proc the general level of development is promoted.

Typology of developme

Just as there is a definite relationship between levels and the dimensions of development, there also a definite relationship between development le and typology. Typology of development is presen in Table 2. It may be observed that out of 34 bloc 22 have uni-sectoral development, the develo sector being cooperative sector : 3 blocks h moderately developed educational sector and 3 h a developed agricultural sector. It may also be no that except one block, rest of the blocks with uni-sec development belong to backward category. There 45 blocks which have bi-sectoral development. 32 blocks, this development is in combination w 'cooperative' sector. A cursory look at the table bri forth the point that the backward blocks have m some strides only in respect of 'cooperation' follow by 'education'.

As the level of development goes up, the typol of development changes. It may be observed that developed blocks in general comprise develo industrial and infrastructural sectors like transp banking, communication, etc. Development of a cultural sector and cooperation is most comn among the blocks which are identified as having bel average level of development. Thus, the blocks wh are in the initial process of development have mai

TABLE 1
Dimensions of development

Sl. No.	Dimensions of Development	No of taluks	EXHB	EB	HB	B	A	MD	D	HD	ED	EXI
1.	Totally backward	32	8	9	11	4						
2.	Uni-sector Development	34	1	10	13	8	2					
3.	Bi-sector Dev	45		2	15	17	4	5	2			
4.	Three-sector Dev.	25				7	6	9	2	1		
5.	Four-sector Dev.	10				1	2	6	1			
6.	Five sector Dev	5						1	1	2	1	
7.	Six Sector Dev.	2					1		1			
8.	Seven sector Dev	2						1	1			
9.	Eight sector Dev	6						2		4		
10.	Nine sector Dev	12						1		4	2	
11.	Totally Developed	2									2	
	Total	175	9	21	39	37	15	23	10	11	4	

TABLE 2

Typology of Development

'otal backwardness		B. Uni-sector development		C. Bi-sector development		D. Three-sector development		E. Fourth-sector development	
:veloped sectors	No. of Blocks	Developed sector symbol	No. of Blocks	Developed sector symbol	No. of Blocks	Developed sector symbol	No. of Blocks	Developed sector symbol	No. of Blocks
ll Sectors	32	C	22	EC	13	CBA	1	CTPA	2
ckward		E	3	ET	2	CBE	2	CTBH	1
		A	3	EB	1	CTH	2	CEAIs	1
		H	2	EA	3	CEA	5	CEAIs	1
		P	1	EH	1	CTA	1	CECom H	1
		IS	1	ELq	2	CBH	1	CEBT	1
		T	2	CH	3	CEI	1	CABT	2
				CA	6	CEB	1	ETPA	1
				CT	1	CECom	1		
				CIq	1	CEIs	1		
				CIs	1	EBA	4		
				CP	1	EIsA	2		
				CB	5	ETH	1		
				TH	1	TPA	1		
				TP	1	TqPA	1		
				TB	1				
				AIS	1				
				ACom	1				
›tal	32	Total	34	Total	45	Total	25	Total	10

TABLE 2 (Contd.)

Five Sector /elopment		G. Six Sector development		H. Seven Sector development		I. Eight Sector development		J. Nine Sector development		ALL SECTOR DEVELOPMENT	
veloped nbol	No. of Blocks	Developed Sector Symbol	No. of Blocks	Developed sector Symbol	No. of Blocks	Developed sector symbol	No. of Blocks	Developed Sector Symbol	No. of Blocks	Symbol	No. of Blocks
THIs	1	EBCH	1	EHCom	1	IqC	1	C	5	All Sector developed	2
BAIq	1	ETCH	1	CHP	1	IqB	1	B	2		
HBIq	1					BA	1	A	3		
IsTHP	1					B Com	1	E	1		
Com. PA	1					BC	1	Com	1		
						MA	1				
tal	5	Total	2	Total	2	Total	6	Total	12	Total	2

Symbols C = Co-operation
B = Banking
T = Transport
Com = Communication
E = Education
P = Power
H = Health
A = Agriculture
Iq = General Industrial
Is Small scale Industrial Development

loped "cooperative" sector. As the development l goes up, development spreads to other social structure like education and health. Higher level evelopment is attained with developed secondary and tertiary sectors. Thus, alongwith the level of development, typology of development undergoes a change.

Development strategies

We have presented in the above paragraphs the levels of development of blocks under study and, based on the dimensions of development, identified the typology of the development that has occurred in each of the blocks. Coming to the final exercise we may now, using their levels of development and typology of development, bring these blocks under some convenient groups so that from each of these groups a strategy of development suggests itself on the basis of their developmental needs and potential. On the basis of development the blocks under study may be brought under the following groups :—

Group I : This group consists of blocks having very high level of development and at the same time having all the sectors developed or at the most having a situation of uni-dimensional backwardness.

Group II : This group consists of those blocks where the productive sectors like agriculture and industry are backward but the remaining sectors are developed.

Group III : Consists of developed blocks having one of their productive sectors backward.

Group IV : Consists of backward blocks having all the productive sectors as backward In this category a majority of the backward blocks viz., 97, are included.

Group V : Consists of backward or average blocks having one developed productive sector unit Besides, these blocks lack in economic and social infrastructure.

Group VI : Consists of all the backward or average blocks with either developed agricultural sector or industrial sector.

Based on the above observations, the following broad guidelines may be presented for promoting the development of the block groups under study :

1. The blocks with EXHD level and falling under Group 1, do not require any special plan efforts as the present level of plan efforts is adequate to keep them moving forward. In fact, in blocks like Bangalore, it is advised to discourage further industrialisation as these have already reached the stage of self-sufficiency and could automatically attract outside capital and entrepreneurs Some of the blocks designated as ED and HD also come under group I. The blocks like Belgaum, Chitradurga, Davanagere etc., could be said to be in the take-off stage and they just require special attention towards the development of social and economic infrastructure which would help their productive sectors to grow at a faster rate. Group I also consists of blocks with development levels labelled 'D' and 'a' like Chickaballapur, Hospet, Bidar and Pandavapura which have good development potential but require some attention towards the development of all these sectors.

Group II consists of blocks which have developed on account of miscellaneous productive sectors like forests, plantation, ports, etc. and the availability of good infrastructural facilities. However, they are not fully developed in terms of agriculture and industrial sectors. While strengthening the miscellaneous productive sector, it is worthwhile in their case to explore the possibilities of developing their main productive sectors.

Group III blocks like Dharwar, Hubli, Hassan, Mercara, Bhadravathi, Mysore and so on have one of their productive sectors developed in them, but they need improvement in their social and economic infrastructure.

Group IV consists of backward blocks like Jewargi, Yadgir, Shapur, Shorapur, Aland, and so on which require an entirely new strategy of development The process of development in these blocks is still in the initial stages. It is important to survey the resources of these blocks in depth and to assess their development potential. Special attention should be paid for the development of social and economic infrastructure and productive sectors in these blocks.

Group V consisting of the average blocks with developed productive sectors need special attention for the development of social and economic infrastructure.

Block-level planning

To sum up, in order to develop the micro regions like the blocks it is essential to examine the extent of backwardness, spread and typology of their backwardness and depending on the nature of the development problems, appropriate strategies should be adopted for the development of each type of blocks The major thrust of planning should be on the development of all types of blocks in the State. While in the case of some, emphasis should be on the development of productive sector and in the case of others, emphasis should be on social or economic or socio-economic infrastructure development Some blocks, of course, require overall attention However, it should be the aim of the planners to raise the levels of development of all the blocks within a period of say 25 years or so Regional disparities are bound to remain, even in the most affluent countries; but these disparities need to be narrowed down to tolerable limits. The planners should adopt an integrated sectoral regional development policy so that regional sectoral specialisation is encouraged and the general development takes place without, at the same time producing any serious ecological problems □

Imperative of dryland farming

A.L. Venkateswaran

Dry-land farming in the country accounts for 73 per cent of the 130 million hectares cultivated for foodgrains but contributes only 42 per cent of the total foodgrains production. The consensus at the various seminars organised recently by the Rajaji International Institute of Public Affairs & Administration was that priority be given to dryland farming and adoption of new techniques for it and to fully harness the present irrigation facilities in order to more than double the existing foodgrains production during the Seventh Plan. This is essential as the foodgrains production is planned to be raised to 185 million tonnes annually during the Seventh Plan from the estimated production of 151 million tonnes during 1984-85.

It is heartening that during the Seventh Plan period, top priority is to be given to dry-land farming and the full utilisation of the irrigation facilities already established so as to achieve a target of production of 185 million tonnes of foodgrain, as against the estimated output of 151 million tonnes during 1984-85. The irrigation facilities are also proposed to be increased to cover additional 15 million hectares In this context, it would be as well to remember, for a perspective longer term planning, that India's population is expected to reach the one billion mark by A.D. 2000 and that even at the present level of consumption (which is woefully lacking in nutrition among the poorer sections of the population) 250 million tonnes of foodgrains will be required.

Emphasis on dryland farming and the need to fully harness the existing irrigation facilities are among the major recommendations which emerged at the Seminars on Agriculture organised by the Rajaji International Institute of Public Affairs and Administration in Coimbatore, Hyderabad and Calcutta, during the last two years. The participants at these Seminars included Ministers of Agriculture of various States, Members of Parliament, MLAs., Agricultural Scientists, Economists, Officers of Central and State Governments dealing with agriculture, and representatives of Farmers' Forums, etc. They recommended that, in addition to the emphasis on dry land farming and utilisation of already existing irrigation facilities, attention was also needed simultaneously in several other areas of agricultural and administrative activities. The recommendations of the Seminars have been brought to the notice of the appropriate authorities of the Central and State Governments and there is reason to think that they have appreciated them and formulated the necessary policy and plan. However, it would be appropriate to bring out in one place all the necessary strategies requiring simultaneous attention at various levels which this article seeks to do.

Planning essential

After the euphoria of the green revolution of the 1960s (which incidentally was manifest only in Punjab, Haryana and Western Uttar Pradesh), unfortunately a complacency set in due to the belief of self-sufficiency in foodgrains, which was superficial and a short term achievement. As a result, Agriculture did not receive the necessary attention and perspective planning that it deserves Consequently, during the last

three years the country has had to spend Rs. 2000 crore or more per year in foreign exchange for importing wheat, rice and edible oils. While a certain amount of buffer stock of foodgrains may be necessary to meet the vagaries of the monsoon, the question has also arisen whether it is cost effective to keep stocks of the order of 26 million tonnes, in terms of storage space and locked-up capital with high interest rates. In this background also, the priority for dry land farming coupled with the full utilisation of the irrigation potential already created assumes importance in that with a little more stability in agricultural production, it may be possible to reduce the colossal outlay on large foodgrains storage. Dry land farming accounts for 73 per cent of the total foodgrains cultivated area of about 130 million hectares, but contributes only about 42 per cent of the total foodgrains production.

Irrigation helps raise output

To take up the question of utilisation of the irrigation facilities already established (about 66 million hectares), the potential they have for increased yields does not yet appear to have been fully appreciated. An irrigated hectare should yield a minimum of 4 tonnes of foodgrains in a year as against the present actual yield of 1.7 tonnes. With the present level of irrigation potential (of 66 million hectares) allowing for some of it being used for non-food crops, it should be possible to produce 200 million tonnes annually from irrigated areas alone. What is disturbing is that about 22 per cent of the additional irrigation potential created since 1950 remains unutilised. In Rajasthan Canal areas where thousands of crores have been spent lot of water is reported to be going waste due to command area development not coming up as required.

The need is therefore to secure the optimal utilisation of the irrigation potential through measures like the modernisation of the old canal system, provision of drainages so as to prevent water logging and consequently loss of soil due to salinity, lining of the newly constructed canals to avoid extensive loss due to seepage, strengthening of the Command Area Development approach, and expeditious completion of the irrigation projects in the pipe-line (whose costs go on escalating) rather than launching grandiose new projects.

Further irrigation charges should be recovered on the basis of water used. At present farmers pay the same charge whatever be the quantity of water used, which is not sufficient even to meet the operating cost.

Urgency of land reforms

Fragmentation of holdings also has bad effect on production. The size of an operational holding has come down to about one hectare in States like UP and Bihar. Fragmentation of this order (which is likely to get worse with passage of time) does not permit utilisation of modern scientific technology and acts as a major constraint in the increase of foodgrains production. It can no longer be allowed to continue unchecked. Prime reason for Punjab and Haryana being leaders in agriculture is that they initiated and completed a crash programme of consolidation as far back as 1950s. From the air one can note the difference in land contours in these states and in other parts of India. The rest of the country has to follow suit without further loss of time. The progress in land reforms has been tardy due to indifferent implementation, lack of determination, legal loopholes and administartive inadequacies. One does not get any evidence of this important aspect getting the necessary priority, emphasis and vigorous attention. Instead, State Governments are prone to resort to populist measures like abolition of land revenue, even in areas where incomes have significantly gone up, which have hardly any impact in augmenting agricultural production.

Obstacles in consolidation

There seems to be some recognition that centralised concepts of planning woven in Yojana Bhavan cannot apply uniformly all over the country due to significant differences in terrain, soil conditions, climate, etc. The eastern States (where there is considerable untapped potential) need special attention in this regard.

There are not only wide variations in yields within these States, but also the average is far below the yields in other States or even the all-India average. In Bihar, for example, the yield of rice in 1983-84 was only 1016 kgs. per hectare as against the all-India average of 1458 kgs. and of Punjab of 3063 kgs per hectare. Variations in the yields of wheat, coarse cereals and pulses follow the same pattern. In eastern UP there is a wide gap of 40 per cent between irrigation potential created and its utilisation For instance in the Sharda and Gandak Command Areas the low utilisation is due to the non-completion of field channels. Since the farmers are reluctant to construct water channels the State can construct the same and recover the expenses from the beneficiaries

Havoc of Jhumming

In Meghalaya, Nagaland, Arunachal Pradesh and Mizoram 'Jhumming' is still practised on a large scale. Under this system which is deep rooted among the tribal people, forests are cut down and burnt and crops are planted over that land. After a crop or two the lands are abandoned and fresh forests are cut down and burnt. This leads to soil erosion and permanent loss of fertility of the soil. Urgent methods are needed to wean the people from Jhumming and for adopting modern methods of cultivation Some efforts are reported to have been initiated in this regard with hardly any positive results.

Flood control

In India we have the spectacle of the same areas in UP, Bihar, etc., suffering floods and later acute drought. The National Flood Commission (headed by late Jaisukhlal Hathi) in its report of 1980 made several recommendations for flood control. The Central Minister for Irrigation announced in Parliament (in October 1982) that the Centre had evolved a Rs. 50,000 crore national plan to fight floods and drought in the country and that it would soon be implemented. Nothing has been heard thereafter in this regard. An integrated time bound plan of action on a national scale would substantially reduce losses due to these calamities.

Improving the dry land farming

In regard to dry land|rain fed areas, Government had taken up a number of projects on water-shed basis. But a breakthrough is yet to be made in this regard. The constraints are (i) the technology developed for dry land farming has not yet been demonstrated or transmitted to the fields ; (ii) land has to be well prepared before the onset of the rain (as against the present practice of farmers to wait for enough showers to plough the hard soil and then sow—which means loss of valuable time during the limited period of rainfall and the crops have also to be tailored to the soil and rainfall conditions; and (iii) the inputs have to be subsidised as these are the worst poverty stricken areas requiring assistance and priority in allocation of resources.

In regard to (i) one should listen again to what Dr. Norman Borlaug (the well known Mexican Scientist who at the bold initiative of Mr. C. Subramaniam the Minister of Agriculture helped India to import 18000 tonnes of Mexican wheat seeds which helped usher in the green revolution in the 1960s) had to say in Hyderabad in November 1983 'Research Scientists have to gain the confidence of farmers. When I went to Mexico in 1944 the farmers there would not even shake hands with me. It was only after demonstrating to them that the research scientists could really help them, that their confidence was gained'. He said further 'The expense on technology could not be justified if same is not transferred to the farmers. Political will, capital investment, scientific research, dedication and determination are necessary to increase food production. Lack of determination in transfer technology would not help increase food production. Half the people in the world are farmers. The real reason why we are not able to help farmers is our reluctance to work with our hands. Only by going to fields and talking to farmers, one would find the crops talking to us in whispers. It could not be seen or heard if one remained far away from the farmers. A technology package should be worked out on the fields of farmers, and not on Government's experimental farms One should know how to restore economically the fertility of the soil, how to plant and how to irrigate the crops. Otherwise one would be guilty of misuse of nature's resources'.

For the transfer of technology from Lab to land, the rest of the country could usefully follow the example of the Punjab Agricultural University. 'Seeing is believing' is the principle followed. The technology is demonstrated to the farmers in fields. The farmer's wife also sees it. Literature is made available in English and Punjabi. In each district there are five or six Agriculture specialists. Farmers' training camp is organised in both Kharif and Rabi seasons. The university also holds two farmers' fairs in a year mostly for distribution of seeds stamped by it. Nearness to the source of information is an important factor to the farmers. The media also have played a great role in educating the farmers.

To see the effectiveness of the scientific technology developed for dry land farming, it is revealing to visit ICRISAT, (International Crop Research Institute for Semi-Arid Tropics with rainfall from 500mm to 1200mm) Hydeabad where one can see side by side the results of the newly evolved and the traditional methods of cultivation. ICRISAT has demonstrated that instead of the emaciated and uncertain (one) crop at present, two good crops—one cereal and one pulse—could be grown well. For this, the farmer has to spend more time on his land. To enable the farmer to plough the hard soil even before the onset of rain, ICRISAT has developed better farm implements which can be operated with bullocks. But soil preparation has to be accurate. Bullock power with mechanisation would reduce the farmer's preparation distance from 60 km hectare to 6 km hectares. He could also be able to put seed and fertiliser (which have to go together) more accurately into the soil. The degree of mechanisation would match with the increased labour the technology requires. This would result in higher wages of labour. But the marginal farmer cannot afford to own the required implements or even hire them at the full charges. It is here that Government should provide him timely assistance in providing the facilities at subsidised rates.

It would be clear from the above that a multipronged integrated approach in different aspects is necessary to achieve the required quantities of agricultural produce. By properly harnessing the existing resources in land and water coupled with application of modern technology, it is possible to step up foodgrains production in the country even to 400 million tonnes.

Making dryland farming viable

Dr. Badri Bishal Tripathi

Highlighting the importance of dry land farming with bountiful of natural resources like stone, limestone, Khair, medicinal herbs, wood and other natural resources, the author herein calls for auick measures for raising the productivity of arid land. The remedial action suggested covers expansion of irrigation facilities, soil management, water, harvesting, introduction of high yielding varieties of seeds, new agronomic practices and development of cottage industries in dry farming zone. This, the author feels, will undoubtedly raise the incomes of the dryland farmers.

THE LESSON OF agricultural development in India, since independence, is an inspiring one. As a result of institutional and technological changes a continuous growth of agricultural production and productivity has been the most remarkable achievement of Indian agriculture. Technological change has contributed to nearly trebling of foodgrains output in India during the last thirty two years. A qualitative change has taken place in the form of relative shift in area in favour of the superior cereals. It is observed that the most significant development in Indian agriculture during the past one and half decades has been the shift from traditional agriculture to modern agriculture using the science-based technologies. But some problems are presenting challange to our agricultural sector. The greatest challange before it is the need for the development of our dry land farming

Nature of dry land farming

Extensive areas in India receive low and erratic rain fall. There is tendency of frequent failure of crops. These are hot, arid and sub-arid areas located in different parts of the country. Farming system and crop composition of arid and sub-arid areas is called 'dry farming'. Conceptually, dry farming refers to the technique of crop cultivation in such regions that are marked by scarce rain-fall and absence of assured irrigation. In other words, as the name suggests, dryfarming is a term assigned to the cultivation carried under scanty and precarious rain fall without any assured irrigation facilities. Dry land farming is sometimes equated with rainfed farming. However, for operational purposes, it is necessary to distinguish the dry land farming areas from absolutely arid or desert areas with average annual rainfall below 375 m.m. on the one hand and areas having a relatively assured rainfall of 1125 mm. and above on the other. The availability of irrigation facilities has also to be taken into account as a significant factor modifying the intensity of dry land farming in different rainfall zones. Keeping these aspects in view, it is estimated that in the country as a whole there are as many as 128 districts which have low to medium rainfall under 1125 mm annually and which also have very limited irrigation facilities.

Areas covered

These districts account for nearly 68 million hectares or about one-half of the total net sown area in the country. Out of these districts the very high intensity dry farming areas mainly cover central part of Rajasthan, Saurashtra, region of Gujarat and rain shadow region of western Ghats in Maharashtra and Mysore. Twenty five districts fall in this area, with rainfall ranging from 375mm. to 750mm. and irrigated area below ten per cent of the cropped area

These areas are characterised by the maximum extent of instability in agricultural production and, therefore, present difficult problems. Out of the remaining districts 12 districts already have irrigation covering more than 10 percent of the cropped area and hence the problem of these districts is no longer acute. The remaining 91 districts spread out mainly in Punjab, Madhya Pradesh, Gujarat, Maharashtra, Andhra Pradesh, Mysore, Uttar Pradesh, and a part of Tamilnadu represent the typical dry land farming tract. The total net sown area comprising in these districts is estimated at about 42 million hectares of which about 5 million hectares are irrigated. A large part of these areas receive annual rainfall ranging from 750 mm. to 1125 mm. Sixth Five Year Plan also lays great emphasis on increasing agricultural production on dry land areas having annual rainfall between 750 mm. to 1125mm. These dry land farming areas hold good promise of responding to a new package of technology and here for all the analytical purposes terms like dry farming, dry land farming or farming under rain fed conditions have been assumed to be the same.

Nearly twenty five percent of the total cropped area in the country is irrigated by various sources and the balance continues to depend on rain. The rainfall patterns are erratic and the period of rainfall and the number of rainy days in different areas vary considerably. Though the rainfed areas account for 73 pe cent of the cropped area their contribution amounts to only about 42 per cent of the total foodgrains productions. The entire quantity of coarse grains and pulses as also most of the cotton and oilseeds are produced in rainfed areas. But there is acute fluctuation in production in these areas year after year and these fluctuations adversely affect the total agricultural production of the country.

Problems facing dry farming

Dry land farming is much handicapped as compared to irrigated farming and assured rainfall farming in the mater of full exploitation of land and other available resources. On dry lands multiple cropping is not possible, the level of fertilizer input is extremely low consequently productivity per unit of land labour, power and other capital resources remain low. As a consequence of dependence on nature, scanty, uncertain and insufficient rain, agricultural production and productivity ramain low. In other words, uncertainty as well as instability of production and low yields are the hallmarks of dry lands. This obviously is the cause of frequent crop failure on dry farm lands. As a consequence of dependence on nature the farmers, therefore, try to grow short duration and drought resistant varieties of crops. The same is the story of a dry farmed tract situated in Allahabad district.

District Allahabad is situated in South eastern part of the state of Uttar Pradesh The district has been divided into three natural parts viz. Yamunapar, Gangapar and doab which have dissimilar topographic conditions. The area across the river Ganga is quite fertile having loam and sandy loam soil. Doab area has mostly alluvial fertile soil. The trans Yamuna area of Allahabad district which lies in the south of Yamuna, forms a part of Bundelkhand region and comprises the tehsils of Karchana, Meza and Bara. The soil in this tract is very shallow and poor in plant nutrients. Most of the area across the river Tons has clay and sandy soil with a hard pan. It is the area in which Vindhyachal ranges extend from the neighbouring Mirzapur district. This is the chronically drought affected area of the district. The marginal southern part of trans Yamuna area represents a typical dry land farming tract with rocky and hilly land and insufficient rain. There is an irregular plateau of inferior mar and clay. The soil of the major part of Yamunapar tract has very poor plant nutrients and together low water level. This is the most chronic drought affected area of the district. Ironically the major part of the available land in the area is extremely poor in organic content. There is great instability in production due to erratic and inadequate rainfall and other location specific factors. Vegetation in these areas is poor and over exploited. Land available for cultivation is limited and there is preponderance of cultivation on unsuitable lands and marginal lands. Paddy is the main kharif crop of the area. Coarse grain such as khesari, barely, and gram is generally pr[illegible] during the rabi crop in the area. The return from the land is very poor because of low yield and dominance of coarse grain crops.

The irrigation facilities are poor resulting in very low yields of crops. Boring of tubewells in the area is too difficult due to presence of hard rocks in the area. Though canal facility is available in the area, its uncertain water supply and small catchment area restricts the optimum use of canal irrigation facility. The majority of open wells run dry in summer season when it is extremely urgent to irrigate the rabi crop. Irrigation through ponds is also very limited. There is high concentration of live-stock since the population prefers mixed farming to supplement their meagre return from crop production. Livestock population is underfed and weak. The milch cattle give milk at an average of only 0.25 liters per animal per day. Generally they are taken to forests or water lands for grazing. The pressure of live stock population has led to overgrazing of the land which is already poor in vegetation. This has resulted in severe depletion of top soils cover and serious soil erosion problem. Though the climate and environmental situation is less harsh in the area then many other regions of India, unplanned and over utilisation of natural resources and the lack of their conservation measures are responsible for substantial imbalances in the ecology as well as for the backwardness of the area.

The recent seed fertiliser technology adopted in he irrigated areas which resulted in Green Revolution n the country has not yet been extended in the dry armed areas. The same is true with the above region f Allahabad district. The trans-Yamuna area, specially the southern part of the area is agriculurally much backward as compared to the Gangapar nd Doab region of Allahabad District. Cultivation s beneficial to only those farmers who own and perate a larger size of holding than to those farmers wning and operating small size of holding because arge farmers have greater control over the supply of f scarce agricultural resources. They have greater ccess to credit their greater credit-worthiness and ossess greater technical dynamism. Thus rural weak f the area are bound to survive in the state of abect poverty.

Uncertainty in dry land productivity

Uncertaintity is the basic problem and risk which very farmer of the area has to face. The incomes f the farmers in this dry farming tract is not only mall but it also fluctuates widely from year to year. The farmers of the area owing to their insufficient eans and resources are seldom able to stand the isk especially when it involves disastrous losses. As result there is serious decline in farm incomes and onsequently failures on part of farmers to pay heir land revenues and other taxes. As a result of eagre purchasing power there is decline in the emands of finished goods. They are unable to repay he loans which results in mounting of the debts. Thus the entire commmunity is affected by the acute isk element due to uncertain rain and non availbility of assured irrigation of which the farmers are irect and primary victims. Poor crop and its insability is the primary cause of the backwardness of he cattle wealth in the area. Under-utilisation of vailable resources is another important problem of he area. As a result of poor agricultural infrastructure he cropped area and output of rabi and kharif rop is extremely low. Thus the people of dry farming areas are not fully aware of green revolution. ts impact on dry farmed areas is limited. Soil nd climatic situation of the dry farmed areas do ot permit effective application of non-traditional gricultural inputs and hence people of dry-farmed reas are unable to utilise the opportunity provided y green revolution.

It is the irony of the circumstances that neither he programmes of community development and Panchayati Raj nor could the cooperative movement nd green revolution secure adequate participation rom the weaker sections of the farming community. Since agriculture is the main source of livelihood of he people in the area cultivation is to be diversied and intensified.

Remedies

Since the inception of high yielding varieties programme in 1966, it has become a must that immediate step should be taken to improve the lot of the people of dry farming areas. For it is felt that any delay would accentuate the wide gap between the income of the farmers of irrigated and unirrigated areas and foment social unrest. It is estimated that switch over from dry to dry-irrigated farming almost doubles the yield in value but the cost does not increase in the same proportion or to a significant extent. On the basis of different research findings, concentration on the following will be beneficial for the dry farmed areas as well as for the above explained dry farmed area.

Productivity of land is the function of many inputs such as light, air, quality of soil, seeds, fertiliser, human efforts, agricultural implements and irrigation. But assured irrigation is the precondition for the fuller utilisation of the capacities of other inputs applied in cultivation. The effeciency of other inputs is handicapped by the inadequacy of irrigation. Modern agricultural inputs such as high yielding varieties of seeds, chemical fertilisers are more responsive to irrigation. Crux of the Green Revolution lies in high-yielding varieties of seeds and assured water supply. An estimate of the Indian Council of Agricultural Research shows that crop production is about 50 to 100 per cent higher in irrigated land in comparison to unirrigated lands in same locality. Expansion of irrigation facility is necessary because it increases the gross cropped area. It also helps in raising the yield per unit of land and remove the elements of uncertainty in the agricultural production. In this way irrigation can inject dynamism in agriculture and allied occupations. In other words answer of the problem of dry land farming lies, upto a great extent, in the expansion of irrigation facilities. In this context there are two important tasks to be performed. Firstly, expansion of irrigation facilities in different parts of the country. Tendency of new projects should be accelerated towards dry land areas and highest priority should be given to the completion of all unfinished irrigation projects. Secondly, there is intensive need of education programme through demonstration and extension services for water management at farm level.

Soil management includes soil conservation, contour bunding, correction of alcalinity of soil Soil conservation programme was initiated during the first Five Year Plan period and has been intensified over the successive plan periods. Till 1979-80 an area of 23.40 million hectare was treated by different soil conservation measures. No comprehensive survey of the extent of area requiring soil conservation and reclamation treatment has been made so far. However, the National Commission on Agriculture and the Working Group on Soil Conservation

and land reclamation for the sixth plan have estimated that an area of about 175 million hectares is in need of soil and water conservation measures for preventing degradation and restoration of such degraded lands. Thus according to the available estimates, substantial areas of land in the country are affected by soil erosion and land degradation. Therefore, there is a vast area to be covered. Benefits of soil conservation programme occurred in the shape of development of land as also creation of employment opportunities. Soil conservation on individual holdings cannot be taken up entirely at public cost in view of the magnitude of the problem, especially when the benefits occuring therefrom would go to individual land holders. However, some sort of incentives by way of subsidy or loan at low interest rate, technical guidance are contemplated to tackle such problems. During the Sixth Five Year plan a target of 7.1 million hectares had been fixed for soil conservation. Adequate outlays have been made at the state level for implementation of the programme

The run-off or the excess rain water could be stored in small ponds covered by water mats to prevent evaporation and the same could be used for even one life giving irrigation to plants. In general the run off water collected into small ponds can be used in the following situtation.

(1) Saving of standing Kharif crop from draught affect.

(2) Providing pre-sowing irrigation for rabi crop.

(3) Extending the growing season for the benefit of long duration crops.

(4) Providing a minimal irrigation for growing vegetables, fruits and fodder crops in small areas.

Rattooning is also a form of water harvesting. It means cutting of the crops in such a way as to leave the roots and a lower point of the mainstream in the soil so that when the next rain comes, the plants start growing again. It is observed that most of the rainfall in dry areas is limited to a short span of rainy season and because of the poor soil structure and underlating topography much of it is lost. Hence, steps are necessary for popularisation of modern water harvesting procedures. Development of technological packages involving water harvesting through form ponds in urgent felt need of the area.

An important aspect of dry land agriculture improvement is related to the introduction of new high-yielding crop varieties. The development of quick-yielding crop varieties and photo insensitive varieties have opened new opportunities. New short duration varieties of Arhar, Jwar, oilseed and cotton are much beneficial in dry farmed areas It is necessary to extend the adoption of these varieties in dry farmed areas. But it is very unfortunate that high yielding varieties of arhar, oilseeds and cotton developed so far, are not capable enough to compete the high yielding varieties of wheat and paddy. Breeding of suitable varieties of 'moth' which grows well under semi-arid and arid conditions is necessary. Bulk of cotton crop (about 66 per cent) is grown under unirrigated conditions. Research is needed in the group of cotton for introducing early varieties of cotton crops.

New agronomic practices are necessary for mitigating the adverse impact of aberrant weather. Among the new agronomic practices application of nutrients and foliar feedings would be included. Another alternative for imparting stability for arid agriculture is adoption of massive native grasses. These grasses and other fodder crops will help the livestock farming particularly pasture based sheep and cattle raising which is inherently more stable enterprise and have comparative advantage in the arid areas. Crop substitution will also be helpful to improve the agricultural economy of the area In this context, choice of capable crops having low water requirements is necessary

Development of cottage and village industries is necessary to minimise the extent and intensity of seasonal and disguised unemployment in the area. Dry farmed areas are rich in natural resources, viz. stone, limestone, khair, medicinal herbs, wood, tobacco leaves and tendu leaves. These natural resources available in arid and semi-arid areas are under-utilised. Cottage industries based on these natural resources will be helpful in mitigating rural unemployment.

Commission on Bhopal gas leakage

The Centre has constituted a Scientific Commission for continuing studies on the effect of Bhopal Gas leakage on life systems. The Commission, under the Chairmanship of Dr. C. R. Krishna Murti, has started functioning at New Delhi.

The Commission's main task is to collect all available information data from Governmental non-Governmental and voluntary agencies which have been conducting studies on different aspects of the Bhopal accident and have accumulated valuable material|data on its cause, nature and effects on life systems.

For utilising their expertise, the Commission will feel obliged if representatives of concerned agencies in or outside Delhi could contact the Chairman in his office at Sardar Patel Bhawan, New Delhi and make available to him any information which may be useful for the Commission.

Agencies interested in continuing the study on Bhopal Gas Leakage are requested to send names and addresses of their representatives so that they could be contacted personally. ☐

Salient features of Seventh Plan

Yojana Correspondent

THE SEVENTH PLAN, as adopted by the National Development Council, envisages a total investment of Rs. 3,22,366 crore over the plan period 1985—90. This is to be financed by domestic saving of Rs. 3,02,366 crore estimated at 1984-85 prices and net inflow of funds from abroad to the extent of Rs. 20,000 crore. Thus, nearly 94 per cent of the total investment is to be financed from domestic resources.

The draft Seventh Five Year Plan was considered and approved by the National Development Council in its two-day meeting held on November 8-9, 1985 in New Delhi under the Chairmanship of the Prime Minister, Shri Rajiv Gandhi. The NDC meeting was attended by Chief Ministers of all the 22 States, Lt. Governors|administrators of the Union Territories, Union Finance Minister, Shri Vishwanath Pratap Singh, Union Minister for Human Resources Development, Shri P. V. Narasinha Rao, Deputy Chairman, Dr. Man Mohan Singh, Minister of State for Planning, Shri Ajit Panja and Members of the Planning Commission.

Of the total plan investment outlay of Rs. 3,22,366 crore, about 48 per cent, which is Rs. 1,54,218 crore, is estimated to be in the public sector and the balance of Rs. 1,68,148 crore (which is 52 per cent) in the private sector.

Public sector outlays

The total public sector outlay for the plan is Rs. 1,80,000 crore at 1984-85 prices. This includes current year's outlays of Rs. 25,782 crore. The public sector investment outlay in the plan will be Rs. 1,54,218 crore. The outlay for Seventh Plan represents an increase of 85 per cent in nominal terms over the Sixth Plan.

Of the total outlay of Rs. 1,80,000 crore for public sector, Rs. 95,534 crore is in the Central sector, the balance of Rs. 80,698 crore in the States and Rs. 3,768 crore in the Union Territories. The share of the latter (States and UTs) in the total works out to 47 per cent. The plan is heavily oriented towards power, agriculture, rural development, social services and human resources development.

Out of a total public sector outlays of Rs. 1,80,000 crore, Rs. 10,573.62 crore has been allocated to agriculture, Rs. 9,074.22 crore for rural development, Rs. 3,144.69 crore for special area programmes, and Rs. 16,978.65 crore for irrigation and flood control. A total of Rs. 54,821.26 crore including Rs. 34,273.46 crore for power, Rs. 519.55 crore for new and renewable sources of energy, Rs. 12,627.67 crore for petroleum and Rs. 7,400.58 crore for coal has been allocated to energy sector. Industry and minerals gets Rs. 22,460.83 crore. This includes Rs. 2,752.74 crore for village and small-scale industry and Rs 19,708.09 crore for large and medium industry. Transport sector as a whole gets Rs. 22,971.02 crore. Of this the share of railways is Rs. 12,334.55 crore, of roads Rs. 5,200.04 crore, of road transport, Rs. 1,990.10 crore and of other transport Rs. 3,446.33 crore. The total outlay comprising communications, information and broadcasting is Rs. 6,472.46 crore. The allocation in the science and technology sector is Rs. 2,466.00 crore. The total outlay for social services is Rs. 29,350.46 crore. This includes Rs. 6,382.65 crore for education, culture and sports, Rs. 3,392.89 crore for health including medical, Rs. 3,256.26 crore for family welfare, Rs. 4,259.50 crore for housing and urban development, Rs. 6,522.47 crore for water supply and sanitation, Rs. 1,520.43 crore for welfare of scheduled castes, scheduled tribes and other backward classes, Rs. 930.00 crore for special Central additive for scheduled caste component plans, Rs. 1,012.36 crore for social and women's welfare, Rs. 1,740.18 crore for nutrition and Rs. 333.72 crore for labour and social welfare. Others get Rs. 1,686.79 crore

The Prime Minister told the NDC that public sector will continue to enjoy the commanding heights of economy in the development of the country. He also said that the industrial policy as evolved by Pandit Jawaharlal Nehru and Mrs. Indira Gandhi will be continued for the all round development of the country and for removing regional imbalances in development.

Plan outlays of States/Union Territories

The total plan outlays for States and Union Territories are Rs. 84 466 crores. Of this, Rs 80,698 00 crore is provided to States, Rs. 3,768 00 crore to Union Territories and Rs 2.559 00 crore for Central funding of special area development programmes for hill area, border area development programme, western ghats development programme, tribal areas, North Eastern Council and other area development programmes.

Of the plan outlay of States, Andhra Pradesh gets Rs 5,200 crore, Assam Rs 2,100 crore, Bihar Rs. 5,100 crore, Gujarat Rs 6,000 crore, Haryana Rs. 2,900 crore, Himachal Pradesh Rs. 1,050 crore, Jammu & Kashmir Rs. 1,400 crore, Karnataka Rs. 3,500 crore, Kerala Rs. 2,100 crore, Madhya Pradesh Rs. 7,000 crore, Maharashtra Rs. 10,500 crore, Manipur Rs. 430 crore, Meghalaya Rs 440 crore, Nagaland Rs. 400 crore, Orissa Rs 2,700 crore, Punjab Rs. 3,285 crore, Rajasthan Rs. 3,000 crore, Sikkim Rs. 230 crore, Tripura Rs 440 crore, Tamil Nadu Rs. 5,750 crore, Uttar Pradesh Rs. 10,447 crore and West Bengal Rs 4,127 crore. Unallocated gets Rs. 42 crore Of the plan outlays for Union Territories, Andaman and Nicobar Islands gets Rs. 285 crore, Arunachal Pradesh Rs 400 crore, Chandigarh Rs 203 crore, Dadra and Nagar Haveli Rs. 46.17 crore, Delhi Rs. 2,000 crore, Goa, Daman and Diu Rs 360 crore, Lakshadweep Rs 43 83 crore, Mizoram Rs. 260 crore and Pondicherry Rs 170 crore.

Financial resources

The aggregate resources for the entire plan period are placed at Rs 3,48,148 crore comprising an investment outlay of Rs. 3,22,366 crore and current development outlay of Rs. 25,782 crore in the public sector The investment outlay is to be financed through domestic savings of Rs. 3,02,366 crore and net inflow of foreign funds to the extent of Rs 20,000 crore.

Of the total domestic savings of Rs 3,02,366 crore, public savings comprising savings of government, public sector non-financial enterprises and public sector financial enterprises, has been estimated at Rs 57.422 crore. The balance of Rs 2,44,944 crore is accounted for by private savings comprising corporate, cooperative and household savings. Public savings account for 19 per cent of the total domestic savings during the plan period while the balance of 81 per cent savings will be generated in the private sector. Within the private sector, household savings dominate with a share of 71.5 per cent of the total domestic savings.

Out of an aggregate outlay of Rs. 3,48,148 crore for the Seventh Plan, Rs. 1,80,000 crore is in the public sector and Rs. 1,68,148 crore in the private sector. The public sector outlay provides for investment outlays of Rs. 1,54,218 crore and current development outlay of Rs. 25,782 crore over the plan period. Public sector's own savings available for investment in the plan is estimated at Rs 49,156 crore. This, however, excludes public sector financial institutions. Public sector will have to draw upon the domestic savings of other sectors to the extent of Rs. 87,062 crore and foreign savings of the order of Rs. 18,000 crore besides generating its own resources in order to finance an investment outlay of Rs. 1,54,218 crore during the Seventh Plan period.

The share of public sector investment in total investment will be nearly 48 per cent over the Seventh Plan period as compared to 53 per cent targetted for the Sixth Plan.

Additional resources mobilisation

The additional resource mobilisation by the Centre and the States including their enterprises is envisaged at Rs. 44,702 crore for the Seventh Plan. Of this, Rs. 22,490 crore will be mobilised by the Centre and Rs. 22,212 crore by the States Specific measures to raise this much resources will be decided in the light of the economic situation emerging year to year. The net inflow of resources from abroad is targetted at Rs. 18,000 crore, which constitutes 10 per cent of the total public sector plan outlay.

The Centre will transfer Rs. 29,737 crore to States out of its Plan resources estimated at Rs. 1,29,039 crore. The balance of Rs. 99,302 crore will be left to finance the Seventh Plan outlay of the Centre including Union Territories.

Uncovered resources gap

The resources estimated from the various sources add up to Rs. 1,66,000 crore as against a total public sector outlay of Rs. 1,80,000 crore. The gap of Rs. 14,000 crore, thus, is proposed to be covered through deficit financing. This level of deficit financing is thought to be within the safe limits taking into consideration current price situation and the trends in the economy.

Employment

Over the Seventh Plan the employment potential is expected to increase by 40 million standard person

years against an increase in the labour force of around 39 million person. Employment is expected to grow at 4 per cent per year as against expected growth of 2.6 per cent per year in the labour force. The backlog of unemployment at the outset of the Seventh Plan has been estimated at 9.2 million.

Since the major objective of the plan is to ensure that the growth of employment opportunities is faster than the labour force, the major employment generation activities are to be found in agriculture, rural development, village and small industries, construction, public administration and other services. In the agricultural sector, the annual growth of employment potential is 3 5 per cent whereas in the non-agricultural sector employment generation is 4 5 per cent per year. The plan is expected to generate full employment in the rural areas.

Poverty alleviation

The development strategy of the Seventh Plan aims at reducing poverty at an even faster rate Encouraged by the National Sample Survey 38th Round of consumer expenditure distribution (1977-78 and 1983-84) concluding that around 36 million people crossed poverty line between 1977-78 and 1983-84, the percentage of population with a consumption standard below the poverty line is expected to come down from an estimated 36.9 per cent in 1984-85 to 25.8 per cent in 1989-90. In absolute terms the number of poors will fall from 273 million in 1984-85 to 211 million in 1989-90, the bulk of the improvement being in the rural sector. This will follow a combined result of the contemplated growth pattern and more effective implementation of various poverty alleviation programmes like National Rural Employment Programme (NREP) and Rural Landless Employment Guarantee Programme (RLEGP) already started in the Sixth Plan. These expanded programmes are expected to generate 2458 million mandays of additional employment (9.04 million standard person years). The anti-poverty programmes in urban areas include slum improvement projects etc.

Growth rate

The Seventh Plan aims at a growth in gross domestic products (at factor cost) of 5 per cent a year and also in the subsequent ten year period. This choice is consistent with the results derived from projections of the long term demand pattern and implications of the goal of self-reliance. The incremental capital output ratio (ICOR), which relates to increase in GDP at market prices to the total investment over the plan period, is expected to be around 5 in the Seventh Plan.

The realisation of the growth targets will involve further acceleration of the pace of development both in agriculture and industry. In addition, vigorous efforts will have to be made to maximise utilisation of the existing assets and capacities.

Objectives

The cornerstone of the Seventh Plan objectives is Food, Work and improved Productivity. The Plan, therefore, seeks to emphasise policies and programmes which will accelerate the growth in foodgrains production, increase employment opportunities and raise productivity. The development strategy aims at direct attack on the problems of poverty, unemployment and regional imbalance. Besides, environmental protection is also an important component of the development strategy of the Seventh Plan.

Long term perspective

The Seventh Plan provides for a long term perspective plan for 15 years (1985—2000) aiming to create by the year 2000, the conditions for self-sustaining growth internally and the development of technology. In the sphere of industry it is proposed to attain international competitiveness in major products. The objective is to make India a modern, technologically aggressive economy with expanding capacity to provide the basic material and cultural requisite of well being for all people. In short, effective implementation of the development strategy outlined in the perspective to the year 2000 is expected to lead to a reduction of the population below poverty line to 5 per cent and near full employment. Added to this, per capita consumption of food and clothing will have registered a substantial increase.

Plan implementation

No plan can succeed without its effective implementation. The Seventh Plan proposes to improve project formulations, sanction, implementation and monitoring in development of all sectors. The decentralisation of the planning process and full public participation in development will be pursued on the lines suggested by the Planning Commission Working Group on District Planning. □

Employment prospects for trained apprentices

The Central Government Departments have been asked to keep 50 per cent of the vacancies for trained apprentices and remaining to be filled by direct recruitment. According to the Ministry of Labour, States have also been requested to issue similar instructions.

Up to June this year, under trade apprentices scheme, 29660 were under training out of 1454 located seats in the Central Sector and 1.01 lakh out of the 1.37 located seats in the State Sector and the utilisation of seats for graduate and technical apprentices runs between 42 5 per cent to 56 6 per cent

This growing pollution menace!

M. Hari and N. V. Rajeshwari

Continuing degradation of natural habitats has resulted in environmental pollution threatening health of the people. To combat pollution menace, the author feels, we must devise methods to reduce industrial wastes to a tolerable level or recycle them for constructive uses. Tackling of the problems will largely depend on a combination of policy decisions, legislative measures and technological innovations. Besides, the masses must be educated and convinced about personal hygiene, cleanliness and importance of keeping the surroundings pollution free.

MAN'S INCREASING INTERFERENCE with nature beyond a certain limit causes environmental damage, which often given rise to problems of pollution. Today, environmental pollution is a growing threat to Asian countries. Continuing degradation of water, air and land can be due to rapid population growth and unsound development practices which do not provide for environmental protection In developing countries, the pollution is mainly due to poverty arising from lack of resources to ensure a decent standard of living for the majority of people Pollution of the environment is a very common phenomenon observed both in towns and villages all over India and it needs urgent attention. The excessive growth and rush of people from village to urban areas resulting in overcrowding of cities, rapid industrialisation, urbanization have led to an increase in environment pollutant load that poses a serious public heatlh problem. We are going too fast towards total industrialisation, without taking proper precautions and safety measures, this can be evident from the recent industrial disaster at Bhopal's multinational Union Carbide.

Even in rural areas the problems are increasing as a result of increasing population, inadequate hygiene and unsafe drinking water. The biggest and potentially most harmful source of pollution results from the creation and disposal of wastes.

The most obvious feature of pollution problems is that new ones are proliferating—in complexity as well as kind—faster than we are able to understand and solve them. "Answers seem to accrue at arithmetic rates; pollution problems, at geometric rates". Two other characteristics of pollution problems are their unpredictability and their persistence.

Repeatedly we have proved unable to foresee either the intensity or the scope of pollution effects before they emerge as some form or forms of serious environmental degradation. Also, we are learning from harsh experience that many of these unforeseen effects are largely irreversible, at least within the time span of a human life. Thus, within the past few years we have come to realize that, in the earth's atmosphere, the number of pollutants have increased, and in most cases these increases are continuing. Of the contaminants or pollutants, some are irritant, some are hazardous to health, some are systematic poisons, some are toxic or even destructive to living beings and some produce abnormal growth. Unfortunately, the municipal organizations today which are required to enforce existing provisions against pollution are themselves the major polluters. The problem of environmental degradation in the cities is still within our power to tackle. But environmental degradation in the

·al and poorer regions of India is rapidly getting ractable because their renewable and non-renew-le resources are fast dwindling to the point of no urn.

It is conceded that pollution problem in the country s reached tremendous dimensions and the major ısons for increasing pollution are the increase in pulation size and advances in technology and the plication of energy to limited productive purposes ius the study of environmental problems is of vital portance for seeking suitable approaches to their lutions.

Industrial pollution

Pollution of air and water has become a greater :nace to life than even armaments and nuclear wea-ıns. For many decades, industrialisation became the rect cause of the pollution of the air and water in ıman environment. Indirectly industrialisation has ten meant overcrowding of labour habitations ıich again create problems of sanitation and health. India, cities like Bombay, Calcutta, Ahmedabad, ımshedpur, Kanpur etc., have already entered the ınger zone of pollution. The wastes of the nuclear ›wer plants now deposited under the sea are not ıly causing contamination of fish and other marine una but also perhaps doing more damage in many her ways unknown to science. In addition to these, ere is much greater danger of the contamination of r and water due to modern agricultural technology.

Air pollution

In India though the level of air pollution in atmos-ıere is lower than that of the developed countries, :t increasing number of industries in cities are con-ibuting to high level of air pollution. About 80 per :nt of the industrial production of India is concen-ated in only 10 cities. This has already created ·vere environmental problems in isolated pockets of ːe country. According to some estimates, 10 per cent ' people are directly affected by air pollution in ıdia, generated by manufacturing processes, old and ıtmoded vehicles, weather inversions due to meteoro-ıgical conditions and improved land use patterns y locating polluting industries in residental areas.

The Chembur—Trombay area in Bombay where in-ustries are concentrated, showed 3 to 6 times higher ollution than the rest of the city. At the fertilizer ıctories at Gorakhpur and Ahmedabad, there is pol-ıtion of the atmosphere due to fuel gases. In the Ieyvelli Lignite Complex in Tamil Nadu, the at-ıospheric pollutants of significance are dust, smoke, rit, sulphur dioxide and carbon monoxide. The steel ıdustry is one of the major sources of pollution at :hilai, Rourkela, Durgapur and Jamshedpur

Among all the sources of air pollution, automobiles re the biggest source of environmental pollution ıutomobiles in India are increasing in number day by day causing more pollution to the city as well as the rural environment.

Water pollution

Nearly 80 per cent of India's population lives in villages, and open wells are the sources of drinking water in most of these villages. Surveys carried out indicate that most of these open dug wells are pollut-ed. Water pollution comes from three major sources (i) sewage, (ii) industrial waste and (iii) agricultural waste. Today industry contributes more water pollu-tion than do household users. The enteric diseases take a toll of human life in India at the rate of about 360 per 100,000. This is mostly due to contaminated water and absence of adequate sanitation and sewage collection and disposal system. According to the sur-veys carried out on selective stretches of important rivers it has been found that some of these rivers are grossly polluted. It is estimated that by 2000 AD the volume of waste water discharged by the Indian In-dustry may rival the amount of domestic sewage

Solid waste

Solid waste collection and disposal methods adopted in the developing world including India only add to the over all problem of pollution It is estimated that ur-ban population in India (about 110 million) generates an estimated 15 million tonnes of waste management by municipal agencies resulting in inadequate solid waste services. The ill effects of the policy are being felt most severely in cities with high population density where large amounts of solid wastes are produced and the land available for disposal is limited These have to be solved by improving the methods of waste dis-posal, reuse, recycling, greater control of pollution at the source, and better location of pollution-generating activities.

Noise pollution

Environmental noise is one of the new killers of our society. It is the most subjective pollutant. Our cities like Bombay and Delhi have already joined the most noisy cities in the world. Noise has always been with us, but never has it been so obvious, so intense, so varied and so pervasive as it is today. The sum total of such evidence is that if present noise level continues, most metropolitan city dwellers may be-come deaf by 2000 AD, it could even become lethal.

Effect on human health

All aspects of pollution are directly or indirectly related to human health and well being So the first victim of environmental degradation is health. Asians have become more prone to disease because of soil, air and water pollution. The results of pollution are often diffused and not generally understood In addition to their immediately unpleasant effects, such as dirt, filth, and bad odours, many kinds of pollution have a delayed impact in terms of chronic illness, materials

erioration and a gradual loss of the value and pro-
ıtivity of agricultural or natural ecosystems. The
naging effects of many kinds of pollution are in-
ased because of the phenomenon of biological con-
tration or magnification. The cost of air pollution
:erms of ill health, agricultural change and deterio-
on of construction materials and personal goods,
lready very great, but it is so diffused and indirect
t we are not aware of the great price we are paying.

The direct adverse effects caused by air pollution
be immediate as well as delayed. An unusual in-
ase in air pollution can cause immediate rise in
rbidity and mortality and the symptoms will be
:rable to respiratory system. Delayed effects are
ny and will vary depending upon the type of pol-
ınt. Asthama, primary lung cancer, fibrosis of the
gs and bronchitis are some of the delayed effects.
:n genetic effects cannot be ruled out in case of
io active and chemical substances. In addition to
se there are many indirect effects like : increased
dical costs, working days lost due to sickness,
nage suffered by structures, cost due to additional
mination necessary in a polluted atmosphere. Air
lution has caused in many areas dramatic injury to
h agricultural crops and natural plant communities.

The spread of diseases due to water pollution is a
l known hazard. Sewage wastes in streams, rivers,
es and coastal waters create several major kinds
problems. These wastes may contain pathogenic
teria and viruses which are a threat to human
lth. Populations are ravaged by infectious diseases
in motion by unprotected water supplies and in-
quate waste disposal, food sanitation and vector
trol. Diarrhoeal disease and water borne parasitic
:ctions certainly rank among the top causes of ill-
s and death.

The effects of noise vary from mild annoyance to
versible changes and permanent hearing loss. In
lition to this, noise interference with communica-
ı often causes accidents. Noise of high level affects
heart as well as decreases oxygen supply to the
in. Interference with digestive processes has also
n experienced due to sudden unexpected noise
t the most significant health problem caused by
se is interference with communication.

Prevention and control of pollution

Pollution was taken for granted and was probably
a time within the limits of endurance. But now a
ge has been reached when such pollution has be-
ne a menace to the very survival of man. So we
st take all the safeguards to avoid pollution of
ry kind. Prevention of pollution will be much
aper than paying its price once it has worsened
situation. India has already enacted the Water
evention and Control of Pollution) Act, 1974 and
nificant advancement has been made in the field of
er pollution control. As the Air (Prevention and
Control of Pollution) Act was enacted only in 1981
the country has acquired a very minimal experience
in this regard. There is, however, no legislation to pre-
vent other sources of pollution caused by solid indus-
trial wastes. The problem of industrial pollution is
becoming a serious one in India. Here it should be
considered that the per capita income in India is very
low and industries can only increase the economic
standard of the people, but it shouldn't be at the
cost of environment. Regarding noise pollution the
authorities take little notice of this. Noise is not get-
ting the attention it deserves. In India, legislation to
control noise sources is virtually absent. Though the
Government of India has taken steps to control pol-
lution, by setting up of a National Environmental
Council, the Department of Environment etc., and by
a few other measures it lacks environmental-cum-
economic approach.

Many in this country believe that pollution is a
local problem and has not assumed national or even
regional dimensions. Already major cities in India are
throwing up signs of degradation in quality of life
which bring out in bold relief the necessity of timely
measures to be adopted at national or regional level.
What is required is to work out standard methods for
analysis and measurement of pollution in various
fields Acceptable norms, standards and permissible
limits of pollution which have to be practicable in
application and enforcement is the foremost require-
ment before a law is enacted. Unfortunately, signs of
this determination are far from propitious.

How to control pollution

A constructive approach to pollution requires more
than knowledge of pollution results; we also need
to understand the human motives and actions
that produce them. In India, pollution control
does not require dealing with industries alone but also
bringing changes in the attitude and the way of living
of our masses.

As environmental pollution is dangerous and harm-
ful for human health, it is essential to control these
pollutants For this purpose, a comprehensive plan-
ning is necessary. Regional co-operation in re-doubled
anti-pollution efforts is the only way to ease the
problem.

Government has passed Air Pollution Act which
should be strictly followed by factories through a
strong legislation. Industries should be allowed to im-
port pollution monitoring and controlling equipment
as they are not easily available in the country. Indus-
tries should consider pollution control techniques and
their effect on workers. Proper treatment and moni-
toring of pollutants inside the factory will be helpful
in controlling pollution from industries. It would be
good to demarcate industrial and residential areas
with green belts in between. This can be done with
wise and firm planning. Pollution control should be-
come a part of the planning of new industry.

For the management of environment, it is essential to know the adverse effects of toxic pollutants. Once the impact of each pollutant on man is properly noted, it will certainly attract the attention in continuous monitoring of pollution at strategic points to know their position relative to desired level. Government must conduct researches through their medical research centres and suggest suitable preventive measures to check pollution, inside the factory so that occupational diseases incidence may be minimized. Enactments of laws on pollution control should be public oriented. Government should finance the factories by providing loans, so that they can use preventive measures to control pollution emanating from the factory.

Although there are laws prohibiting throwing of human and animal excreta into the river, this is not strictly followed. Laws should be more strictly enforced to protect river from pollution and ill hazards. Municipal drainage must be taken far out into the ocean and not allowed to be discharged close to the seashore. It is very essential to educate our masses and convince them about personal hygiene and self cleanliness as well as keeping the surrounding areas clean.

There should be a law to keep worn out and noisy vehicles off the road. Noise from crackers and music bands should be subject to control. Noise made by motor cycles should be lessened through regulation of their manufacture and regular checking by traffic police.

The growth of the populations should be checked as it is one of the prime reasons of environmental degradation.

Conclusion

The interacting effects of unchecked population growth and industrial and agricultural expansion cause most of our environmental problems. India cannot envisage zero population growth as zero economic growth as salvation from pollution propounded by many western environmentalists. It is because the pollution generating rate has exceeded the digestive capacity of nature that it should be the concern of the nation. We must either cut our output of waste back to a tolerable level at which natural systems can handle them or we must aid the recycling process with our technology. How best to tackle this problem depends on a combination of policy decisions, legislative checks and technological innovations.

When we reach the point where the cost of pollution is greater than the cost of controlling it, the public must demand appropriate action by government and industry be willing to support it.

It is a real challenge to the scientific community of the world whether it is possible to make agricultural, industrial, technological and economic deveopment without getting embroiled into desecrati poliation and devastation of our natural envir whether a 'clean natural environment' is inc ble with a 'clean human environment' socially mically and politically. □

Ninth meeting of Indo-Sovie planning group

The Deputy Chairman of the Planning Comi Dr. Manmohan Singh, has said that the rapid c ment of constructive economic cooperation w Soviet Union has been a matter of profoun faction for India. With the signing of the firs Soviet Trade Agreement in December 1955, system of commercial exchanges based on t trade with India was initiated and subsequer panded through the mechanism of five-year Plans. As a result, Indo-Soviet trade has de and diversified at an exceptional rapid pace Manmohan Singh was inaugurating the Ninth M of the Indo-Soviet Planning Group here today

With the several-fold increase in the trade t since 1950s, the Soviet Union has now emer one of India's largest trade partners. In addi primary products, Dr. Manmohán Singh ad wide variety of consumer durables and engi goods now figure in our exports to the Soviet and imports on the other hand have enabled I strengthen her industrial and machine buildin The proposed five year trade plan, he said, project further expansion in trade turnover. Dr mohan Singh emphasised that beginning wi credit extended by the Soviet Union in 1955 Bhilai Steel Plant, a number of large project been set up with the Soviet assistance in such as steel, non-ferrous metallurgy, heavy mac petroleum, coal, power, electronics, drug pharmaceuticals.

The Indo-Soviet Planning Group was set pursuance of the agreement of September 19 Cooperation between the Planning Commiss India and the State Planning Committee of the It has been an excellent forum for discussion wide range of problems, from mathematical pl models to practical aspects of plan implemen It has also provided planning experts and techi from the two countries the opportunity to pu mutually beneficial dialogue on a variety of conc or practical issues and to gain a deeper insigh planning systems and processes.

Fighting pollution of Ganga at Hardwar

S. Sivasankara Pillai

Government has set up the Central Ganga Authority and drawn up an action plan for immediately reducing and finally stopping pollution of the Ganga. The recent meeting of the Authority approved an estimated total cost of Rs. 292 crore, out of which Rs. 240 crore has been allocated for the Seventh Plan. At Hardwar work has been taken up on a war-footing preparatory to the Kumbh Mela. The author who visited Hardwar recently writes about the work undertaken against heavy odds.

Hardwar, the pilgrim centre on Ganga, is getting ready to meet the second largest devotee crowd in the world. The Kumbh Mela at Hardwar which occures once in 12 years, falls in April 1986. During the Kumbh days a floating crowd of about five lakhs will bathe at the various ghats on the stretch from Rishikesh to Hardwar. On the peak days of April 12—14 this is likely to go up to 70 lakhs. The crowd is second only to the Kumbh at Allahabad.

No doubt the pilgrims will go back 'purified' but will they leave the very river which purified them in a 'pure' condition ? The Ganga cleaning project at Hardwar and Rishikesh will ensure a clean Ganga to the millions of devotees and also ensure a clean stretch of water after the mammoth crowd leaves the Kumbh Mela zone finally.

A number of residents, priests, pilgrims and shopkeepers of Hardwar told me that they were pained over the recent degradation of the holy ghats through 'nallahs' (small canals) and drains dumping all forms of dirt into Ganga. They welcomed the cleaning project as an urgent need. The Government attaches great importance to the work as sentiment is never 'mere' and the health of millions of people who use Ganga water for drinking and bathing is an inescapable responsibility.

Old sewage system

It may come as a surprise to many that Hardwar had a central sewage system with drains and pumping stations as far back as 1938 when most of our big cities in other parts still had the removal type of disposal of waste. Over the years the town grew into a city agglomeration of over a lakh population. Added facilities at the bathing ghats and the town generated greater volume of pilgrim flow to Hardwar. The town grew in a haphazard manner. Adding to the woes of the over burdened sewage system was the mud and silt that come pouring down the slopes of the Shivalik hills forming the majestic backdrop to the city.

The sewage system of Hardwar is divided into five zones, namely, Bhopatwala, Bhimgoda, Hardwar, Kankhal and Jwalapur named as zones A, B, C, D and E respectively. Each zones has an independent system of sewer lines, sewage pumping station, rising main and sewage is carried to three different sewage farms.

Because of certain short-comings which have developed over the years all the sewage is not carried by sewers and pumped to sewage farms. Large quantities of sewage finds their way to the river.

Super pollution

There is a common belief that a fast flowing river in itself is cleanser enough to tape care of the impure

things dumped in it. If we dump sewage into a river on a small scale, ten miles downstreams water is pure again. But, beyond a limited volume the sewage destroys the very organisms that process it and keep water clean. Pollution level is then such that later efforts at depollution will never generate even the original level. Gordon R. Taylor author of the 'Doomsday Book' calls this condition "super-pollution".

Within hundred yards of Har-ki-pauri, the main bathing ghat of Hardwar near the Kangri Mandir *nallah* empties into the Ganga. This is one of the priority areas taken up for work. Here a sewage pumping station is being constructed to take the sewage in a rising main to the sewer. A generator will also be installed to ensure uninterrupted pumping.

At present 9.5 mld as sewage system byepass and 3.27 mld from drains and nallahs fall into the river seriously polluting it. After the immediate works are completed no sewage would be byepassed into the river or drains and *nallahs* directly fall into the river. However, it would not be possible to totally eliminate pollution of river as some houses, ashrams and shops situated on the bank of Ganga, though served with notices not to discharge into river directly continue to do so. The immediate works would reduce river pollution by nearly 80 per cent.

The water in Ganga became qualitatively unfit for drinking or bathing. The biochemical oxygen demand (BOD) the most important indication of quality has gone as high as 7.2 mg litre as against the permissible level of 3. The pilgrim flow increases every year and it became the utmost concern of the Government to provide a safe, clean stretch of Ganga from Lashaman Jhoola up to and beyond Har-ki-pauri where the pilgrims will throng at the time of the Kumbh.

"Jal Nigam" in action

An amount of Rs. 96 lakhs has been approved for the project. The work, on a war-footing is expected to be completed by the end of December. The Uttar Pradesh Jal Nigam, tackles the task of cleaning Ganga at Hardwar in different ways. The existing sewers are being cleaned. Whereyer polluted water and sewages flow in 'nallahs' to Ganga they will be intercepted through gully pits (for intercepting domestic sewage) and diverted to the sewage drains. The sewage pump houses in disuse are being modernised and four new pumping stations are coming up at strategic points.

The work is done against heavy odds. Occasional downpours create flooding and silting. The town's uneven topography is crisscrossed by 'nallahs', big and small and residential outlets. Near Kushaghat where the five feet wide street and the neighbouring ghats are terribly crowded through out the day, the engineers and workers got excellent public cooperation. The work of laying the new sewer line making connections which would normally have taken more than a month was finished in four nights as day time activity was impossible in the conjested street.

The existing pumping station at Bhimgoda close to Har-ki-pauri is being renovated, four existing pumping plants repaired and generators provided. New gully pits are being constructed and existing gully pits and manholes repaired. One kilometer of existing choked sewer line will be cleaned.

Bhimgoda nallah of this zone is to be tapped into sewage system for which the nallah will be cleaned and made pucca in a distance of 60 meters. A sewage pumping station with electric and diesel pumps will be provided and rising mains laid to take pumped discharge to existing sewer.

For Zone C, the main old city, Mayapur pumping station is being renovated and all the four sets of pumping plants replaced. A generator will also be installed. Seven nallahs passing through this zone are to be tapped into sewage system through work at Kangri Mandi, Nai Sota, Nagan-ki-Haveli, Kusha Ghat, Mayapur, Deopura.

In Kankhal and Jwalapur, existing pumping plants will be repaired constructed and sewer line cleaned. The existing gully pits and manholes are being repaired.

Progress at Rishikesh

The stretch from Rishikesh to Hardwar has been free almost totally free of pollution with the renovation of the pumping station at Maya Kund. With the setting up of additional septic tanks and rising sewer mains at Lakshman Jhoola, Swarag Ashram and Muni-Ke-reti all arrangements will be complete to meet the needs of the Kumbh crowd at Rishikesh and still ensure clean Ganga waters at Hardwar

The unit of the Indian Drugs and Pharmaceuticals at Virbhadra between Rishikesh and Hardwar could have been a source of chemical pollution but for the extremely meticulous care in effluent treatment at the unit's modern plant. The sewage and effluents from the factory and the township of about 15,000 population are treated at a central point. The final effluent is tested to satisfaction for various quality parameters and the sludge removed as manure. A most convincing and foolproof method of effluent testing is that of fish culture. If the small senstive fish survive for 96 hours, it is proof that the effluent is free from all pollutents.

The Ganga drains eight States, Himachal Pradesh, Punjab, Harayana, Uttar Pradesh, Rajasthan, Madhya Pradesh, Bihar, West Bergal and the Union Territory of Delhi. The Ganga basin has served as the

(Continued on page 34)

The Poison that is called lead !

Subhash J. Rele

Many of us are not aware that lead, which looks so innocuous a metal, is our virtual enemy ! It is just not possible for us to escape it as it is present constantly in food, drinking water and air. Lead is used as an additive to petrol to improve performance of vehicles. Fume released by these vehicles is injurious to health. The author cautions against this hazard and calls upon the government to phase out lead from petrol, the step already taken by several countries.

LEAD HAS ALWAYS been an explosive metal. Lead is man's undeclared enermy. Mass of evidence has piled up indicating insidious influence of this innocuous-looking metal on human beings Lead from various sources is absorbed either by ingestion or inhalation. Inhaled lead is absorbed far more effectively. We are constantly exposed to lead in our environment in the form of air contamination from lead smetlting and the combustion of gasoline containing tetraethyl. In fact, lead exposure comes mainly from three sources—food drinking water and ambient air.

Poison we inhale !

Lead is present in varying amounts in foodstuffs such as shell-fish spices, herbs, edible gelatin, pectin, flavourings, good colourants, baking powder etc. Experts, however, point out that compared to the high proportion of lead absorbed through the lungs, the absorption from food is only about 5 to 10 per cent, the lead from liquid foods being more easily absorbed than from solids.

Recent study by researcher, Dr. Jerome O Nriagu concludes that exposure to lead was a factor in the decline of both Greek and Roman civilizations. The study observes that two-thirds of the emperors of ancient Rome may have been poisoned and even mentally unhinged by high doses of lead in their wine and food. It was calculated that Roman aristocrats consumed six times as much lead as modern safety standards allow and therefore many of them suffered from gout, a disease that can be caused by lead poisoning. Dr. Nrlagu figured that wine alone may have contributed half of the lead in the Roman diet. Romans often flavoured their wine—and somefood —with a syrup made from simmered grape juice, and this connection was brewed in lead pots or lead-lined copper kettles. "One teaspoon of such syrup would have been more than enough to cause chronic lead poisoning", said Dr. Nriagu. He also proved by citing cases that lead can cause mental retardation and a variety of personality charges.

And poison we eat !

Lead is present in different foods in traces and thereby accumulates in the body. Its accumulation leads to poisoning and produces chronic illness characterised by severe anaemia and changes in the kidneys and arteries. Surveys show remarkable variations in the lead content of food and water. A British survey showed that the lead content of lettuce could range from 0.3 to as high as 50 ppm; potatoes ranged from 0.2 to 17 ppm, carrots from 0.2 to 11 ppm. The average was 2.7 ppm. Food is also contaminated when exposed to dusts containing lead, and when kept in lead-containing utensils. It is the lead in the blood that plays the havoc.

Cases are known of Americans who have retained a single piece of short in their appendix after eating a game bird and have developed symptoms of lead poisoning. Clair C. Patterson, a geochemist at the California Institute of Technology, said as far

back as 1965 : "There are definite indications that residents of the United States today are undergoing servere chronic lead intake. The average American ingests some 400 millionths of a gram of lead per-day in food, air and water, a process which has been viewed with complacency for decades". The early symptoms of poisoning are fatigue, disturbance of sleep and constipation.

The life that is in cities !

Recent studies by Prof. Eli Goldsmith, a biologist of wide experience, showed that people living in cities had much higher levels of lead in their blood than people living in villages and small towns. Men working in garages, guards in tunnels under rivers and traffic control police had still higher levels. The level of lead in British food is far higher than in the USA at 1.4 ppm against only 0.2 ppm. Much of it used to come from lead arsenats sprays used in agriculture. These are being replaced by fancier, though not necessarily safer, pesticides. Meanwhile, people are eating a growing proportion of canned food. The canning of food enhances lead levels considerably because lead reaches into the food from the soldered seems of cans. Many advanced countries have recently introduced regulations to limit the lead content in canned food to 1 mg. per day and 0.2 mg. per kg in canned baby foods. In India there is hardly any awareness of this danger. Anyone eating an average from one can a day and obsorbing 0.3 per cent of the lead used to solder it, could acquire a typical body load from this source alone.

It has been estimated that per person the normal intake of lead from food including water is around 0.3 mg. daily over and above 0.1 mg. is inhaled as dust and smoke. Water from pipes made of lead contains more than the safe level of 0.1 parts of lead per million parts of water as laid down by the World Health Organisation. The more acidic the water, the greater the hazard. The total quantity of lead absorbed from all sources would amount to roughly 0.5 mg. of the metal per day per person. This is by no means low considering that the provisional tolerable weekly intake of lead as laid down by the FAO and WHO Joint Expert Committee is only 3 mg. per person. It has been found that 12 mg. of lead absorbed daily bring about changes in the kidneys and arteries that shortens the life span. This is because lead has a tendency to accmulate in the human system. The lead eliminated by body is meagre and varies with individuals.

Banning lead in petrol

Another common source of lead poisoning is exhaust fumes from cars and automobiles. Ninety per cent of the lead present in the atmosphere comes from petrol fumes. Lead used as an additive to petrol to improve the vehicle' performance is toxic to man. Inhaling exhaust fumes leads to a higher concentration of lead in the blood than absorbing it in food. A recent report in the British Medical Journal has established a close correlation between poisonous lead content in the exhaust fumes of cars and the level of intelligence of children. Lead compounds added to petrol as anti-knocking agents have been found to retard the mental development of children who breathe the air polluted with exhaust fumes. What is alarming is that almost three-fifths of all lead found in children is accounted for by lead. At a meeting sponsored by the Lead Industries Association in Chicago, Dr. R. K. Byers, a neurologist, gave some harrowing instances of the effect of lead on children. One kid set the school on fire, another nice little girl danced around the desk. I think that lead does something to the growing brain which is different from what it does to the adult brain. I can't believe that this is'nt some way related to interference with the brain enzyms systems through amounts of lead which may not in themselves be impressive.

A recent study by Dr. R. N. Khandekar of the BARC revealed that the lead content in the atmosphere and in the food we eat has reached "alarming proportions" and the contribution of automobile in it was significant. The study has asked for a reduction of proportion of lead in petrol Whereas most of the developed countries have banned the addition of lead to petrol and some are trying to phase out lead from petrol, our country has not imposed a ban on it. On the contrary, the Government, by its recent decision, has allowed the petroleum companies as well as the Indian Oil Corporation to add more octane content in petrol—this means adding more lead content which is hazardous to health. Again with the coming of Maruti, lead pollution is likely to increase it requires a higher grade petrol (87 octane) than what is currently being used (83 octane). The Maharashtra Prevention and Control of Air Pollution Board has suggested a ban on higher lead content. But would anybody care for such a sound advice ?. □

How animal husbandry contributes to economy

The contribution of animal husbandry to the Indian economy in 1984-85 was expected to generate a gross output value of Rs. 10,864 crore which was roughly 18 per cent of the total agricultural output of Rs. 60,493 crores. In addition, the contribution of animal drought power was valued at Rs. 5,000 crores, according to the annual report of the Department of Agriculture and Cooperation.

The estimated livestock population, according to the 1982 census was cattle—191 million, buffaloes—69 million, shee pand goats—138 mllion, pigs—10 million—and poultry—193 million.

Mobilising resources for education

Dr. M.L. Jhingan

'he author calls for fresh thinking on 'dditional resources mobilisation for exten-'ing educational facilities in the country. Je says resources would be no constraint if ' surcharge is levied on land revenue for chool level education in villages and on ıunicipal house taxes for urban education. lesides, for vocational education, resources an be mobilised through a special surcharge n indirect taxes of specific factories and 'gricultural farms and for technical education hrough a certain percentage of profits of 'rivate corporate sector, he adds.

THE NEW EDUCATION policy under discussion the country points out that the most important ıson for slow progress of education in India has been acute paucity of resources. Though in absolute ms the outlay on education increased by 15 times the Sixth Plan over the First Plan, yet it declined real terms. Budgetary allocations of the Centre and e states have failed to keep pace with the growth enrolments and rise in prices. As a result, the total penditure per student has declined. Between 90 to per cent of the expenditure in the States is spent ı administration and teachers' salaries. Primary hools lack in building furniture, drinking water and ıching aids like blackboards and chalks. Besides, condary schools do not have laboratories, libraries, ıygrounds, etc. The budget expenditure on education India is the second highest after defence, but it is rdly 3 per cent of our GNP as compared with 6 to per cent in other countries.

Planning for literacy

According to the World Development Report of the world Bank, the rate at which our population is growing, 54 per cent of the World's illitreate population in the age group of 15 to 19 years would be in India in A D. 2000. To Plan and provide for the expanding educational requirements of the country at the elementary, secondary, adult, vocational, technical and higher levels, there is the need for a fresh thinking on resource mobilisation for education. At present, elementary, secondary and vocational schools in rural and urban areas are being run primarily by State Governments and municipal Corporations. Of course, some schools in urban areas are functioning under private educational organisations. Higher and technical education is being partly financed by the Centre and partly by the states.

To generate resources

To overcome resource constraints and augment financial resources in keeping with the objectives of the new education policy, the following suggestions are made:

Total dependence on the Government for the running of schools at the village or block level should be dispensed with. The village community or panchayat should be associated with the proper running of schools, in administration, maintaining schools buildings providing teaching aid material, and other amenities. For this, the village community should create an education or school fund which should be matched by a grant by the State Government. But teachers will continue to be provided by the latter. The State Government should levy a surcharge on land revenue to be utilised specifically for the educational needs of villages.

To meet the educational requirements in urban areas up to the secondary level, a surcharge on municipal house tax should be levied.

In the field of vocational education, the emphasis should be more on the job training or apprenticeship rather than theoretical instruction in the class room. Such practical training with theoretical instruction should be imparted at the farm or the factory for which diplomas could be awarded. In this way, vocational education will be financed by specific factories and agricultural farms selected for the purpose. Since the majority of our people live in rural areas, the vocational training should also be rural oriented. Besides training the youth in agricultural skills on selected farms, they can also be trained in animal husbandry, poultry farming, bee-keeping, pisciculture, repairing of agricultural tools, implements and machinery, and other arts and crafts in keeping with the factor endowments and needs of the area. Such training will also help them in starting their own vocations. Selected agricultural farms should be attached with Krishi Gyan Kendras at the district level and the diplomas should be given under their aegis. On the other hand, factories selected for imparting training in different fields should be given the status of training institutes for the purpose of awarding diplomas. All these measures are bound to lessen the financial burden on the States and the Centre.

Educational cess on profits of private sector

It is recognised that technical education being provided by polytechnics, IITs, engineering colleges and management institutes, and in the universities is very costly and is a great burden on the Centre and the State exchequers. Since such technical manpower is utilised by the private corporate sector and the public sector, it is imperative that they should bear its cost of education and training. A number of suggestions can be made towards this end : an educations cess on their profits, encouraging the private corporate sector to contribute a certain percentage of their profits to such institutes in their respective areas by giving rebates in taxes; and by rationalising the fee structure, Meritorious students belonging to such families that cannot bear the heavy cost of technical education should be financed by the private and public sectors, and by banks on long-term loan basis.

With regard to higher education, the Report on New Education Policy notes : "As with other sectors, resources available for higher education have been extremely inadequate. The needs are immense for expansion as well as for qualitative improvement," It suggests more resources through increased fees, community subscriptions and contribution by developmet departments and others using the manpower output of higher education. But such measures are not likely to overcome resource constraints on righer education.

Surcharge on indirect taxes

In India, 80 per cent of the tax revenue comes from indirect taxes like custom duties, excise duties and sales tax. We suggest that a surcharge on these duties for education will go a long way in raising enough resources to finance higher educational needs. For instance, tax revenue from custom duties, Union excise duties and Central sales tax was estimated at Rs. 25,500 crores in the budget estimates for 1984-85. If a uniform surcharge of 10 per cent were levied on this amount for education, it would have yielded Rs. 2,550 crores. Since the revenue from these duties increases with every budget, the yield from the surcharge will also increase so as to meet the country's growing educational requirements. The surcharge should supplement the other resources suggested above. ☐

(continued from page 30)

cradle of Indian Civilization. Ganga also serves as the source of water supply for these towns.

Ganga is, being grossly polluted especially near the twons situated on its banks.

The main sources of pollution of the Ganga are Urban liquid waste, (sewage, storm drainage mixed with sewage, human, cattle and kitchen wastes carried by drains etc.), Industrial liquid waste and surface run-off of cultivated land where cultivators use chemical fertilisers, pesticides and insecticides. There is also surface run-off from areas on which industrial solid wastes are dumped.

The Ganga, in its, 2,523 km length, starting from Gangotri in the Himalayas to Ganga Sagar in the Bay of Bengal, passes along some 100 Urban conglamerations.

The Government of India has set up the Central Ganga Authority (CGA) and drawn up an 'Action Plan to reduce immediately and finally stop the pollution of Ganga. The projects include renovation of all the existing sewage pumping and treatment plants in the towns and renovation (cleaning and repairing) of the exising sewage systems in all towns to prevent the overflowing of sewage from silted|blocked|broken sewers into the open drains and the river.

New sewage treatment plants will be installed in all the towns and the existing sewage systems in the towns will be extended to cover the unsewed areas.

The first phase of the project at Hardwar will be a real test both by way of the speed of completion of the works and the efficiency of meeting the pressure of the Kumbh crowd. ☐

New package for poverty alleviation

BACKWARD REGIONS including drought-prone areas, desert areas and hill and tribal areas will receive greater attention in terms of poverty alleviation programmes, resources and technologies with the introduction of microplanning reaching down to the district and block levels during the Seventh Plan.

It is proposed to take up a few pilot projects at the district level to serve as model of micro-level development for specific agro-economic regions. These projects will be duly disaggregated at the block level and the "cluster of villages" ultimately reaching the poorest of the poor who would become the beneficiaries and participants in this venture.

The Government has now adopted a new system of concurrent evaluation of the Integrated Rural Development Programme under which a sample of 10 current beneficiaries and 10 old beneficiaries will be covered every month in 72 blocks of 36 selected districts. The blocks and districts will be selected by the Centre and the evaluation survey will be done by academic or research institutions to identify infirmities and lacunae in the operation of the poverty alleviation programmes.

The Government has decided to make available additional one million tonnes of wheat for expanding the employment programmes under NREP and RLEGP during 1985-86. The cost of additional quantity of wheat will be borne fully by the Centre.

The States accepting additional quantity of wheat will have to compulsorily distribute a minimum of 40 per cent of the wages to workers in the form of wheat which will be given at the subsidised rate of Rs. 1.50 per kg.

Under RLEGP a scheme of micro habitat and housing for scheduled castes, scheduled tribes and freed bonded labourers has been taken up. An allocation of Rs. 459 lakh for Kerala and Rs. 887 lakh for Tamil Nadu has already been made under the scheme.

As for rural water supply, a subject recently transferred to the Ministry of Rural Development, the thrust of the programme will be on providing drinking water to the 38,000 identified problem villages in the first place and then make safe drinking water available to all by 1991.

A number of studies and evaluation reports have indicated that at least 40 per cent of the beneficiaries have been brought above the poverty line.□

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Sixth Plan performance, satisfactory !

DURING THE SIXTH Five Year Plan, the country has been able to achieve the target of 5.2% growth in GDP despite heavy odds both at home and at the international level, including droughts of 1979-80 and 1982-83. The food position now is quite satisfactory with over 26 million tonnes of foodgrains in the stock. By the end of June 1986, India's total foodgrain stock is expected to rise to more than 34 million tonnes, which would mean an excess stock of about 13 million tonnes over optimal levels.

On the power front, the power load factor of thermal power plants has improved perceptibly, and so is the production of steel, cement and other basic industries. The capital-output ratio for the economy has also declined.

As for the balance of payment strategy, emphasis on energy development, replacement of bulk imports at a comparatively low cost to the economy and accelerated growth of exports through strengthening of promotion measures and creation of policy environment conducive to the development of foreign markets has been the main features during the Sixth Plan period. The current account deficit has been brought down sharply from 5 billion SDR to 3.9 billion SDR.

Regarding shortfalls in the Sixth Plan, there has been notable disappointments in the growth of industry. The shortfall in exports was partly due to the severe international recession and partly to the near stagnation of world trade. The shortfall in the investment targets and sharp increase in deficit financing due to inflation were also there. Performance of the public sector was also not upto the expectations. In fact, some public sector enterprises continue to be a net burden on the exchequer. There is satisfaction, however, over the self-reliance in food production, overall industrial growth, achievements in science and technology, including nuclear power, outer space, satellites and telecommunication.□

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Focus on rural banking

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PM on science and technology

NEXT ISSUE

Republic Day Special

Educational targets in Seventh Plan

DURING THE SEVENTH PLAN period enrolment in elementary education (classes I-VIII) is expected to increase by 25 million to cover 92 per cent of population in the age group of 6-14 years by 1989-90. In addition, non-formal systems will be used to bring closer the objectives of universalisation of elementary education. Secondary school enrolment is expected to go up by 5 million, partly through better utilisation of existing schools, and with special emphasis on vocationalisation.

Special efforts will be made to improve the quality of education. As part of this device, model schools will be set up in each district to impart quality education to promising children, particularly those coming from rural areas.

In higher and technical education, the emphasis will be on consolidation and improvements in quality.

Adult literacy programmes will be pursued with the objective of covering all illiterates in the age group 15-35 years by 1990.□

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It's time our scientists came out of their shell !

Rajiv Gandhi

Indianise science and technology to fight the vested interests which want status quo and reliance on imported technology. It is how the Prime Minister addressed himself to the scientists attending the Conference on 'Science and Technology in India—Retrospect and Prospect,' held recently in New Delhi. He says it is high time now we developed our own processes to suit our genius and bring out excellence in all the fields. What we need most is a change in our thinking and striving for a new culture born out of scientific temper in our midst. Unless it is done soon, the Prime Minister feels, it would be very hard to get the type of input we require to build up our human resources.

We are not meeting for just the development of science, or the development of technology. It is a much broader concept; what we are talking about is the development of India. That does not mean just industrial development. Somehow the word 'Development' has been reduced in meaning to straight-forward economic development. But surely that is not really what Jawaharlal was talking about or what we are really meaning today. Development must mean that development of our society and science and technology must have a key role in that development. Panditji talked about developing a scientific temper, I think that was the word that he used The question I would like to ask is, have we developed that scientific temper or have we developed certain laboratories with certain highly trained scientists ? They are two completelly different things. It is only, if we first develop that temper that we will develop the scientists that will grow out of that. And we must target not only at the top esoteric places but also at the bottom to build from there.

Science and technology, a must

Our development, the purely economic side of development, also needs science and technology. When Panditji first talked of science and technology, it was at a time when nobody, believed that India could really do very much in that direction. And there was tremendous scepticism and you must remember what sort of arguments and discussions went on in those days about having a purely rural Khadi industry and about having a proper modern industry. But the fact is that if India is to get out of its poverty, to become a developed country, then we must develop our science and technology And this is really going to be a fight against the vested interests which want to see a status quo to remain. At that time it was one set of vested interests; today it is not very different, it is a vested interest in imported technology, it is a vested interest in a market share that somebody might have got, it is a vested interest in blocking other people from coming into the mainstream. Now, if you are to cut through this, it has to be with science, and technologists and you must be able to cut through this vested interest, develop an atmosphere which is able to do that

Also for replacing old technology

Past policies have done very well I don't think anyone can dispute what is in that Policy Statement and it has stood us well. It has been able to bring about substantial development in many areas But it has also had problems. Mention has been made of space, atomic energy, some bio-genetic areas, some other fields;

yes, we have done well. But has it done well as a whole? Has it changed the culture of our people? Is an average man thinking, I don't mean in a very highly scientific way, but does he have even basic idea of science and technology? I mean, is science and technology—more technology less science—going to be relegated to a few fields for the select few or do we have to go down. Does the electrician have to understand how to wire a house? I mean is that part of our technology? Does a plumber have to know how to fix pipes? This is all technology. It is all part of the culture. And it is not only the top, we have to bring it down to the bottom. You have talked of demand. Where is this demand for new technology going to come? It is going to come when there is an understanding amongst the average people of the dangers of badly implemented or old technology with certain modern inter-faces. I will give you an example, the electrician in our house does not think twice, he opens out the plug, he leaves all the wires open and off he goes. Somebody has not taught him just the basics So while we look at the top we have also to look at the bottom.

The problems in the development of our science and technology has been very much managerial as you have said and this is an area that we would like to straighten out, clean up and speed up as much as possible But of course you have to tell us what we should do. And I have found in a way, that our bureaucracy is very good in the areas in which they have been trained. But once you get out of that area into specialised areas then we get terribly bogged down. Science and Technology is one such area and we have to see how we can speed things up and rationalise them.

We are today looking ahead—looking ahead from a very substantial scientific and technological base. We have to look ahead to see how India, which is at a turning point, will develop—we are a developing country, but there are many fields where we are well ahead of developing countries and we cannot really be counted as a developing country in those areas The question is how soon can we spread those areas to more areas?

Import substitution, not for all

One basic problem has always slowed us down; it is the bugbear of import substitution. Now this was very important thirty-five years ago when we were in certain types of difficulties. But, today the situation has changed very much. We have a certain elasticity in our imports. We should not be forced to substitute everything. The cost of substitution has to be a factor that must be counted. If a minor component, which might cost almost nothing to import, cost us a very substantial amount to produce, I don't think it is worth going through that exercise; and I have been given examples about components costing a dollar which we have substituted by over a thousand rupees. If it is a strategic component for a military hardware or something, yes, we might have to just do something like that. But, for normal everyday use, I don't think we need to go in for that.

The other problem import substitution has caused, which I think is much more serious, is that it has always limited our thinking to the technology that we are trying to replace. If you were to replace and substitute some imported components it is a component which has already been developed, it is a component which is not really frontline, otherwise they might not have sold it to us. And we are now working to replace that. By the time we replace that, that component is totally outdated. And what have we really done? We have given very poor targets to our scientists and technologists. This has to change. We have got to tell them, no, you do not have to replace a component, you have to replace the whole thing, with something new, something as advanced as is available at the time that you come out with it. That is when our science and technology will really start pushing to the frontiers and start equating with the science and technology in other countries.

Fundamental research and accountability

We have to look at our needs. Let me separate the two first, because as you have said, there is a very basic need for fundamental research and this is not something which should be accountable in terms of how much have we gained because we have done this has it paid up back? Fundamental research. I do not think can be accountable in that manner. That does not mean that there should be no accountability; there must be some accountability even for fundamental research. You must set your own targets, you must set your own deadlines to proceed in a certain direction. You might want to change direction after a while. We do not want to carry on a particular research for fifty years once we have realised that nothing is going to happen in it. So these sort of checkpoints must we established, even in fundamental research. And a certain amount of accountability, but not an accountability in terms of cash input, equal to positive gain from that; that might not be there, but accountability in scientific productivity must be there.

Develop indigenous technology

In industry we have a very wide base. But what is this wide base? Is it really our industry or is it something that we have bought out and not even been able to understand ourselves? I don't think we have even improved how to make a plain paper clip. We carry on the something, and in fact, what actually happens is that materials deteriorate and what started off as an acceptable product ends up as unacceptable product. Our industry is today functioning almost entirely on imported technology. Imported technology may be bought out, may be copied. But how much of our industries are actually functioning on Indian developed technologies? A very very small fraction. This is

what we have got to change. And this will change when there is a basic thrust not just for developing a particular product or trying to improve a product or to substitute materials in a product, but also when we go down to the process; the manufacturing process or the production process. Are we looking at that side, are we trying to understand it, are we trying to get our own processes? Very seldom. Is our R&D looking at productivity, is it looking at efficiency? Is it looking at quality? Are we doing research to see how we can replace or substitute raw-materials? Are we looking at the economy in the use of materials, energy conservation, may be energy recovery? Are we doing enough R&D? I am not talking of general R&D on energy. Are we doing R&D on each specific process to see whether we can save energy on that? I am talking of specific production processes. I don't think we are doing enough. Have we done enough work on improving quality, building in an excellence. Again it is a way of thinking, it is a part of our culture. Unfortunately culture somehow has come to mean dances and music and other things. Culture is not dance and music. Culture is how we live, how we think, how we behave. And unless that scientific temper comes into our culture today, we are going to be in very poor shape going into the next century. This is an aspect which you must look at.

Quality control, a must

Quality, bringing in excellence, again is not a question of putting more quality controls; it must start with the user or consumer. That is where the demand for quality must come. Because, that is when the pressure will come in to produce that quality. As long as the customer or user is accepting whatever is given to him, there is no way we will get quality, and in that I am including government—the government is a major user of almost everything we produce. And government must bring in quality. There is a lot to be said for the tender system to see that we get the best deal, but there is a lot to be said for the tender system in destroying quality, in destroying any sense of excellence or doing things a little better. So, basic government thinking has got to change on what we do. Simple things like a public sector captive factory supplying to government, can they get away with giving us rubbish. Can thy get away with delays which cost us years. Why? Because, the technology is not good enough. The technology that they are using and when I am talking of technology, I don't just mean that sort of hard technology, I am including the worker in the technology because he is very much part of that process. If the worker does not have that scientific temper, he is not going to be able to produce quality, he is not going to be able to produce work on schedules. How much are we going to pay for all this? And are we accounting for this in some way? This is the saving that we can make, by building in a properly scientific temper into our culture, by building in a demand for quality. We need feedback from the field to see how components are failing. What are the problems that the users are having? Again it is not good enough. Because, that will then give the direction for research to be done. I don't think there is enough feedback coming in that sense. So, there are areas I feel that we must look at.

Research for improvement only

Coming to more specifically research, specific projects or targets, again the productivity is not really good enough, more accountability has got to come in. Like I said, certain areas of fundamental research must be accountable only that they achieve something scientifically, not necessarily as a return of capital; but other research must include a cost factor. If we are going to look at improving our technology in a particular field the cost of that improvement is important The time taken for that improvement is important If by the time we develop a particular process, or develop a new or a better component, that very component is outdated by something completely new; the whole exercise is a waste of time. And here I think we must first be more careful how we hand out the particular research. It must come under one command. If it is one lab, everything should be under one lab, not one research in a particular aspect or project being spread out with too many people getting responsibility at different levels, at different places. That responsibility must be pin-pointed at one point whatever it is. Whether it is lab-wise or agency-wise, this is for the scientists to work out depending on the size of the project and the complications involved, but that one point of responsibility must be there.

Fix check points

Also we must have some idea of checking progress At what point are we going to cut off and say, 'all right we have made no headway in this, let us scrap this, and let us do some other research, let's look for something else'. Or, may be you don't want to scrap it, may be you want a different direction. We are not achieving enough in this particular direction, let us try some thing else. So, these sort of checkpoints must be built in, and of course, there must be a final cut-off point. If you feel things have gone on to this limit, we have not achieved anything, just cut it off and go to something else. Unless we are able to do this, our technology will never catch up. Perhaps managing science is a problem and we really need to think more about how we are going to handle the management of science. Too often, the press seems to think management means getting somebody from the private sector who can manage everything. But it's not as simple as that; it is something that we have got to develop, we have got to think. Management means everything from the vision to the thinking to the actual implementation. It is not just getting

a production-line going. And we really have to do some thinking on this.

Fewer missions, better results

You have done a little bit and we have come out with missions. Now, my concept of missions was a limited number of fields with very specific targets. Limited number, because if there are too many then it's not a mission, it's what we are doing today anyway. If we have 70-80 items that we are going to try and do, we will not be able to concentrate on any of them and we will get the same sort of diffused thrust that we have got today The idea and concept of a mission was that we choose say half a dozen, maximum maybe ten areas, where we can really do well. Ten areas where in 5 years or 10 years we will be the leaders in technology or in science in those particular areas. We try to target those areas in directions that will give us a direct fall out. family planning may be an area. I am not specifying how we would thrust into family planning Agriculture, energy, other infrastructural items may be aspects of removing poverty. But they must be missions which go all the way from A to Z. This will involve more than just the scientific community. Because the science part could develop it, the technology part would try to implement that and fit it into real life on the ground. But you will need an administration to actually get it to crores of people. So a mission like this has to have a much wider aspect than just the scientific thrust. We must also have missions which terminate with a scientific result or a technological result. We still have not got the list of missions that is why we are struck, it is not waiting with us. Because, if we are going to decide on maybe 10 missions, and you give us a list of 10, it is going to be very difficult, specially if those 10 are limited to one particular field. We have to look right across the board and say, 'O K. we are going to have one in agriculture, two on energy, two on population'. You know, we have to divide that up somehow. And we can't do that unless the full picture is in front of us. So, we need that full picture before we can take a decision on which are the areas that we are going to thrust in. The concept is that we would give much more freedom, remove all the strings in these areas, give proper funding to see that we can make real progress like we have in space, like we have in atomic energy, like we have had in a number of areas. But wherever we have made this progress, it appears to be because a specific target has been given, a group of people have been chosen and told, "O.K. now you go ahead and do it without too much interference in what you are doing on a day-to-day basis." So the idea of the mission is to do this. If we try to do that on 60-70 items, I don't think we will be able to achieve that end. So, we would like to start with a small number; once they get going, next year may be we can look on another 10, the year after we could look at 20. But that initial thrust must come with a limited number.

Encourage young talent

One of our problems in India has been with our scientists, with their salaries, with their emoluments, with their facilities, with their perks, perhaps, even more important with the recognition they get, with the special standing they get. And these are areas that we must somehow come face to face with and sort out. Social recognition is perhaps one of the most difficult areas to tackle and I have been saying for a long time and this is a specific reference to our friends in the press, they concentrate too much on politicians; for them no other field seems to exist in India. Whether you are a top scientist, whether you are a top dancer, whether you are a top musician, you are on top in anything, it doesn't count But if you are the worst politician, you get the headlines This has to change in the press, and perhaps as part of our culture, we have got to broad-base more areas, we have got to produce more focal points for people to try to strive for and achieve and perhaps that will also build in an incentive for a scientific culture. But again some of the problems are of our own making. Mobility: I think scientists must have mobility. In our system they get stuck in a particular place. Even within a department sometimes, I believe, it's difficult to shift them around if the particular research changes, or a subject changes So, we have to look at that and perhaps we also have to look at age; with due respect to older scientists who are here, because when I talk to scientists in the U.S.A. and some friends of mine who are in industry and in fundamental research in England and other places, one thing comes out, that even those who are with me are today finding that we are just not in touch with what is new coming out. If basic research has to be done, it is the chap who is just coming out of university, perhaps even below 25, who is able to really cope with that. We must work in a similar way. I am not saying that all the older scientists must be made jobless or thrown out but that opportunity must be given to the fresh mind as it comes out with all the new ideas from university, from college, from whatever institution they have come from. This we are not able to do in our system. We have to develop somehow to allow this to happen.

Develop scientific temper in all

Lastly, I would just like to reiterate that ultimately what will help us to develop a real base for science and technology is an involvement of the average person with science and technology, whether it is in his home, whether it is a question of appliances that he is using, technologies that he is using everyday, whether it is in the field where a farmer is using technology. Unless this scientific temper, as Panditji said, really seeps down to our society, we will never be able to get the inputs for science that are within our capability, which are available to us, but are just not being allowed to develop.

Rural banking for the rural poor

Dr. M.N. Mishra

Regional rural banks have upset the money lenders' business. But the beneficiaries of these banks are mostly the rich farmers, not the small and marginal ones This, the author says, is mainly because of the connivance and corrupt practices indulged in by the bank officials and the influence of local leaders. He suggests ways to make it easier for the marginal farmers and landless labourers to avail of more and more credit facilities from these banks.

THE INDIAN PLANS have devoted much for the development of rural people, but they have not received the due share in the national development due to environmental blockade The fruits of progress have not reached the common man inspite of sincere efforts of Planning Commission. All the growth models and strategies have almost failed in the upliftment of the poorest of the poor To study reasons for this failure, we undertook a research project "Appraisal of Credit Facilities Provided by Banking Institutions in Rural Development" We selected 100 households in Amethi to evaluate the facilities available to them Different categories of farmers and business were interviewed The findings are as follows :

The big farmers

It was observed that a large number of big farmers was taking loans from the Regional Rural Bank though they were not legally entitled to secure loans In absence of other commercial banks the purview of rural banks may be extended to big and other farmers with the limit of a certain amount, viz., Rs 20,000 per borrower The extension of credit facilities by the RRBs to them would increase production in agriculture.

The borrowers are facing the problems of producing no dues certificate Before securing loans, they have to produce the 'no dues certificate' to the bank. For obtaining this farmers have to go from bank to bank involving waste of time, money and energy. Therefore, it is suggested that a loan pass book may be issued to all the farmers and businessmen. This pass book must be produced at the time of securing loans and repayment of dues instead of no dues certificate. Thus, all the entries regarding sanction disbursement and reimbursement of loans should be made in the loan pass book. Without production of the loan pass book, no bank should grant loans to the farmers The loan pass-book should be issued invariably to all the households by the district authorities

The needs of credit by big farmers are mainly for medium and long-term loans of fixed capital whereas the needs of credit of other farmers are for working capital for short-term purposes If the bank credit is channelised in this way, the farmers would be benefited and they can repay their loans easily Big farmers get more income from agriculture and other farmers get more income from non-agriculture activities. Therefore, it is beneficial to permit more credit for farming purposes to big farmers and more credit for allied activities to all other farmers

The small farmers

Small farmers should be provided adequate amount of credit for working capital such as seeds, fertilizers, irrigation, pesicides and so on. They do not need large amount of fixed capital. Bank

credit should be provided on individual merit The small farmers are facing the problems of 'no approach' to commercial banks. They are willing to get more loans but are unable to secure loans because they have no approach of any local leaders who exploit their problems and sometimes, charge gratification for introducing the small farmers to banks.

Small farmers are unaware of banking facilities Therefore, it is suggested that they should be told of the different types of banking facilities of credit and deposits by organising exhibitions, fairs and meetings in rural areas Bank officials should try to meet rural people and try to know their requirements. The villagers may suggest effective means to implement the development programmes.

Like big farmers small farmers also face the problems of obtaining 'No dues certificate' It has become too tiresome and troublesome. This is the reason, they prefer credit from money lenders rather than pursuing bank loans So, it is suggested that each and every person should be issued 'Loan Pass Book' by the District Authorities; in which disbursement and collection of loans should be noted down by the banking authorities If the loan book reveals that the farmer is free from loan, other agency may advance loans to them.

Small farmers lack security, so they may be permitted to take loans for such as house-building, repayment of old-loans (taken from money lender) etc. If such loans are not granted to them, they will be victim of money lenders They are more active than the big farmers. Therefore, they should be permitted comparatively a large number of credit than the big farmers but the maximum amount of a credit to small farmers should be lower than that in the case of big farmers.

Analysis of credit facilities provided to small farmers has also revealed that opening of branches in rural areas is very essential. Since the rural markets are not at a distance more than 10 Kms from each other, the Regional Rural Banks may open its branches in the rural markets

The small farmers claimed that they can increase the agriculture-production if they are given credit on easy terms for installation of pumpsets and if their scattered holdings are consolidated There is need of strict and honest administration for rapid and quick rural development. Dishonest and corrupt administration in regional rural banks, land development bank, cooperative societies, consolidation schemes and electricity board have retarded the growth of rural areas It has to be abolished to make rural development a success Many of the small farmers are afraid of unfavourable terms and conditions set by the bank. They may be charged a high rate of interest, they fear. Taking loan involves formalities and use of influence. Therefore, it is suggested that the loaning procedures should be made easy.

The marginal farmers

Marginal farmers are not fully aware of the uneconomic uses of inputs. For example, they maintain bullocks throughout the year for a very small holdings such as one or two bighas whereas they may easily hire bullock or tractor for cultivation purposes at the time of sowing The analysis has revealed that the marginal farmers require credit for working capital They do not need credit for mechanisation such as pumpsets, threshers etc. The marginal farmers may be extended credit for allied activities.

Most of the marginal farmers (85 per cent) are victims of moneylenders They take loans for routine consumption - marriage, house construction, buying milch cattle and at a high rate of interest 37 per cent per annum The moneylenders get free-labourers from the borrowers. They are in a position to manipulate accounts and bond the borrowers for life The moneylenders torture the borrowers if the borrowers refuse to render free labour on the farms of moneylenders who are usually big farmers. This type of situation has to be averted by the banking institutions It was observed that regional rural bank can play a dominant role in improving the living standards of marginal farmers by providing consumption and production loans

The marginal farmers are in urgent needs of credit for routine consumption Regional Rural Banks can come to their rescue because they are nearer to them. It was observed that the marginal farmers did benefit by opening of a branch of regional rural bank nearby the sample village. Without consumption loan from the RRBs, the marginal farmers will not be free from bonded labour and will be exploited. The rich will be richer at the cost of the poor.

Marginal farmers can not perform production activities without loans because they are too poor to save and have to depend always on credit. If RRBs and commercial banks take up a courageous step to finance them, their economic position would improve otherwise it will deteriorate day by day and rural development would be merely a farce They should be provided credit at a cheaper rate for the purpose of buying seeds, fertilisers, pesticides, buffaloes, sheeps, bullock carts, or for paying irrigation charges, cultivation charges or for starting Resha Udyog and allied activities They are willing to obtain loans from banks to repay their old-debts

Only commercial banks and regional rural banks can help the marginal farmers because other

financial institutions have failed to help. Cooperative societies have benefited only the big and small farmers who are availing loans by posing us marginal farmers.

The marginal farmers are least educated. They are totally unaware of the existing facilities of credit given by the commercial banks and regional rural banks. They are not in a position to go to town and avail of the credit facilities from different financial agencies. They have been in clutches of the moneylenders and are accustomed to obtain credit from them.

The few marginal farmers who obtained bank loans have explained that the terms and conditions of bank loans are unfavourable and they may not be benefited by the bank loans. They observed that the administrative and legal bottlenecks have been the main hindrances of credit from bank. They observed that the eligibility criteria of obtaining credit is too rigid.

Small business and cottage industries

For artisans agriculture is an allied activity for small business and cottage industrialists. They do not require credit for agricultural purposes. The banking institutions, therefore, should provide them credit for buisness and small industries. It has been observed that the rural artisans require credit of small amount generally below Rs. 500 00. Such small sum may help them a lot and they can improve their living standards very easily. It was also observed that bad-debts in case of small business and rural industries have not occurred So, it is safer for banking institutions to extend credit to rural artisans and improve their living standards. Wherever a branch of Regional Rural Bank has provided banking to artisans these facilities in the rural areas have improved people's living conditions and changed their dogmatic attitudes. It has created a sense of safety and security against moneylenders. If there are more branches of commercial banks, they may feel more safe and secure.

Cooperative societies and banks have not contributed significantly in the rural development, they have been biased and have encouraged corruption and nepotism. Due to inherent weaknesses they did not benefit the rural masses. Therefore, it is suggested that the commercial banks and regional rural banks should come forward to help the rural masses. It was also noticed from the analysis of the households that these banks can contribute in the rural development only if some of the lacuna and mismanagement are removed.

The commercial banks and regional rural banks should diversify their lending schemes in rural areas to meet the various requirements of the rural masses. Now they should extend their areas of operation. They should also finance for repayment of old-debts.

The landless labourers

Landless labourers are in acute need of credit because they are too poor to have adequate income for consumption and production. They depend on the loans from moneylenders. The banking institutions can help them to improve their living standards. They cannot start their own business activities because of socio-economic backwardness. About 85 per cent of the households are illiterate. The social set up is too weak to adopt new venture.

The regional rural banks have benefited a few landless labourers when a branch was opened in the nearby village. They have started Resham Udyog, piggeries, animal husbandries with the help of credit of regional rural banks.

The moneylenders have taken advantage of the poverty of landless labourers and have bonded them by permitting credit. The banks and development agencies should come forward for their rescue.

It was observed that the landless labourers are the victims of corrupt bank officials and village workers. They were not granted credit unless they put 5 to 10 per cent of the amount of credit. The socially and economically weak landless workers are not in a position to resist against such types of unhealthy practices. Subsidies and grants given to poor people are indirectly enjoyed by the village level workers and bank officials. The corruption in banking makes mockery of development. The corruption should be checked. □

Importance of road transport

Road transport, which has been a vital infrastructure for secio-economic development of the country, has registered a significant growth in both passenger transport and goods transport. As against 8.5 billion tonnes kilometres of freight moved by road transport in 1977, it has gone up to 127.1 billion tonnes kilometres in 1983. It is expected to be around 169 billion tonnes kms. in 1985.

Research and development in the road transport have reached new heights. A prestigious research scheme for development of a Stimulation Model Synthesising the traffic flow under Indian road conditions has been completed recently. The Model predicts the speed pattern and fuel consumption of vehicles under any given road and traffic condition. This Model will be of great use in highway planning and investment decision making. □

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...... for rural growth

Yashavantha Dongre

The regional rural banks registered tremendous branch expansion, enormous deposit mobilisation and excellent credit deployment. But the author feels, that this success may not lead the sponsoring agencies to fix over ambitious targets and thus lose creditability of these banks. The present tempo of their branch expansion has also to be slowed down as these may create problems of managements and coordination. The author lists the improvements that are needed in the functioning of these banks.

THE REGIONAL RURAL BANKS are in the verge of completing a decade of their existence in our Economy. Ever since the first RRB was established in October 1975 (The Prathama Gramina Bank sponsored by the Syndicate Bank and established in Muradabad District of U.P.) their features depicted an inheritance of the essential qualities needed for the development of our complex rural set up. With the combination of the resource base of the commercial Banks and the rural orientation of the co-operatives the RRBs were expected to suit better to the requirements of our economy and the trend shows that the expectation is proved right.

Preference for RRBs

The Kamath study group (RBI study group on Multi-agency approach to Agricultural credit) in 1976 and the Danttwala Committee (RBI committee for the Evaluation of RRBs) in 1977 have, after a thorough evaluation, noted the favourable trend of the RRBs. Today even the beneficiary recognises the difference It is a common sight at all villages, which are linked to RRBs, that the beneficiaries prefer them to any other financial agency. It is interesting to study the progress of RRBs in the vital field of Branch expansion, Deposit Mobilization, credit deployment and the recovery of advances

Their rapid expansion

RRBs have demonstrated their high potential in the area of branch expansion. During the first year about 6 RRBs were sponsored. As many as 34 came in 1977 depicting a growth of about 600 per cent. By March 1979 their number increased to 56 and the next year 10 more banks started operating. By the end of 1980, 87 RRBs were working, covering about 141 districts. The figures for March 1981 stood at 100 and 163 respectively in 17 states. By the end of March 1984 23 states of the country together had 159 RRBs covering 281 districts with as many as 8213 branches. U.P. lead the table with 35 banks covering 43 districts with 1808 branches (Table 1).

In the area of deposit mobilization also RRBs have done a commendable work. Considering the fact that our rural capital is still shy and the RRBs have their net work of branches only in rural areas, the savings they have mobilised is for above expectation. Starting with a total deposit of about Rs. 0.40 crore in 1976 RRBs mobilised Rs. 33.7 crores by Dec 1977, 79.96 crores by March 1979 and 162. 23 crores by June 1980. By the end of December 1983, they have mobilised a deposit of about Rs. 65,345.77 lakhs with about 85,87,913 deposit accounts. (Table 2).

More credit disbursement

The credit deployment by the RRBs, always exceeded their deposits, unlike the commercial banks. Starting with a total disbursement of Rs. 33.32 crores by the end of 1976 they distributed Rs 43.20 crores by 1977, Rs.142.97 crores by March 1979 and Rs.189.22 crores by June 1980. As at the end of December 1983 the RRBs, put together had an outstanding Advance of about Rs.70, 628.93 lakhs standing against 41,70,402 borrowal accounts (Table 2) A formidable feature of

the RRBs is their record in the recoveries side. While the co-operatives and even the commercial banks have been finding it difficult to cross the 50 per cent mark, in the recoveries of priority sector advances, RRBs have placed themselves comfortably. Only Rs.18,254.67 lakhs against 14,01,665 accounts were due by the end of December 1983, constituting about 25.85 per cent of the total outstanding advances. The Deposit to Advances ratio too is quite impressive from the very beginning. The ratio standing at 100 : 108 is higher compared to any financial institutions. The higher deposit to advance ratio and a recovery of about 75 per cent of advances become further impressive, particularly on the fact that the RRBs have lent considerably towards the agricultural sector. By the end of June 1984 of the total advances about Rs. 536 crores were lent to agriculture of which Rs. 509.4 crores as direct finance. (Table 3). The analysis of the Tables clearly speak about the tremendous progress achieved by the RRBs. However there is a fear, that the success of the RRBs may motivate the Government and the sponsoring agencies to have over-ambitious targets and lose the credibility of these organizations, in the bargain. RRBs have came as a long awaited answer to the question of rural savings and advances. Hence due care is to be taken in organising these institutions.

Low cost operation

The greatest feature of these institutions is the low cost of operation. In the eagerness of going for branch expansion, there is a possibility of expanded cost in the form of salaries, furnishing and maintenance cost. They should be guarded against carefully. Further, the growth in the number of branches though encouraging may create the problem of co-ordination and management. Similar problems were found by the commercial banks during their mammoth branch expansion after nationalization. Hence it is advisable that the tempo of branch expansion of the RRBs be slowed down to consolidate the existing branches.

Though the RRBs Act clearly stated that the RRBs are set up "to finance and develop agriculture, trade, rural industries and other allied occupations in the village structure", they are often recognised only with agricultural finance. More than 70 per cent of the RRB advances goes to Agriculture and allied activities. This is to be set right by a close relationship with the term lending Institutions. It is advisable that the RRBs be made to act as the agents of both NABARD and SIDCs, so that Agriculture and Industry may be financed on equal footing. Such a role from the RRB becomes inevitable since the rural industrial requirements are unique and may be better understood by them.

But less viability

With all the stress on the 'service motive' of the RRBs one should not forget that they must go for a minimum percentage of profit, at least to cover their operating expenses. The performance of RRBs in this vital field is rather bleak. Despite various concessions like re-financing at the rate of 3 per cent, maintaining a low reserve position of 25 per cent etc., hardly 50 to 55 per cent of the RRBs have managed to operate on or above the break-even. This should also be a matter of concern for the RRBs.

Yet another area necessitating immediate further action is the training of the staff. The attitude of the staff and their approach to the work are entirely different in case of RRBs. Recognising this, the Government and the sponsoring banks have made some provision for training. However, there is a need to impart training at all levels. The field level staff as well as those who work in office should be made to undergo this training and be put on the actual work only after acquiring a clear conceptual vision of what in expected of them. They would further add to the efficiency of these institutions.

Rural progress hinges on RRBs

RRBs have contributed their might in a short span of almost a decade and have proved that they have come to stay. The future of our rural development programmes depend to a larger extent on these institutions. It is hoped that they will set right their minor drawbacks improved upon their position and prove a right catalyst for development.

TABLE—I

RRB's at end of March 1984

State	No. of RRBs	No. of Districts covered	No. of offices
Andhra Pradesh	12	17	607
Assam	5	10	166
Bihar	17	27	1325
Gujarat	7	11	122
Haryana	2	5	168
Himachal Pradesh	1	3	81
Jammu & Kashmir	3	10	210
Karnataka	8	13	672
Kerala	2	4	238
Madhya Pradesh	20	35	878
Maharashtra	7	13	178
Manipur	1	8	12
Meghalaya	1	3	16
Nagaland	1	7	1
Orissa	9	12	591
Punjab	3	6	18
Rajasthan	13	26	516
Tamilnadu	1	2	116
Tripura	1	3	61
Uttar Pradesh	35	43	1808
West Bengal	8	16	477
Arunachal Pradesh	1	4	1
Mizoram	1	3	1
Total for India	159	281	8213

SOURCE : Report on currency and Finance 1983-84 RBI—Vol. I Page. 182.

TABLE : 2

RRBs DEPOSITS, OUTSTANDING ADVANCES AND OVERDUES END OF DECEMBER 1983

(Rs. in Lakhs)

STATES	Deposit		Outstanding Advances		Over Dues	
	No. of A/cs.	Amount	No. of A/cs.	Amount	No. of A/cs.	Amount
Andhra Pradesh	9,77,210	6,489.55	5,56,658	9,089.86	1,31,497	2,500.24
Assam	2,22,739	1,716 19	42,397	865.38	28,116	329.72
Bihar	14,04,569	11,073 48	6,13,082	9,475.15	2,52,570	1,844.55
Gujarat	67,405	642 73	20,607	397.84	11,630	84.44
Haryana	2,39,476	1,945.23	74,733	1,919.07	31,439	529.36
Himachal Pradesh	1,30,006	1,137 87	21,045	585.82	..	64.29
Jammu & Kashmir	1,41,775	1,241 53	36,950	762.18	17,173	155.84
Karnataka	10,20,876	4,579 07	3,80,164	7,551.28	1,20,355	2,063.66
Madhya Pradesh	5,42,914	4,028 08	2,30,945	4,313.78	85,684	838.67
Maharashtra	1,63,837	827 85	36,989	1,107.98	22,562	423.62
Manipur	5,176	18 54	1,142	23 80	582	2.00
Meghalaya	4,002	35 25	599	10.17		...
Nagaland					.	...
Orissa	6,34,485	3,831.11	5,87,201	7,572.76	2,43,922	2,123.63
Punjab	2,854	33.105	1,157	30 04	229	0.30
Rajasthan	5,06,387	3,637 28	2,11,598	5,590 00	1,00,071	1,603.63
Tamilnadu	2,27,273	1,131.73	1,41,341	2,085 41	48,240	684.85
Tripura	83,208	981.11	88,498	1,499 19	23,256	486.67
Uttar Pradesh	21,66,048	18,629 42	8,15,393	13,740 26	1,65,290	3,059.10
West Bangal	4,92,113	3,766.70	2,99,912	4,008 96	1,19,049	1,460.10
Arunachal Pradesh	—	—	—	—	—	—
Mizoram	—	—	—	—	—	—
	85,87,913	65,345.77	41,70,402	70,628.93	14,01,665	18,254 67

SOURCE : Report on Currency and Finance 1983-84 Vol. II, p. 63.

TABLE : 3

DIRECT AND INDIRECT FINANCE OF RRBs AND COMMERCIAL BANKS TO AGRICULTURE

(Outstanding at the end of June, 30)

(Rs. in Crores)

	1980	1981	1982	1983	1984
DIRECT FINANCE : Scheduled C. Bks. (excluding RRBs)	2,363 8	3,043 3	3,954.2	4789.0	...
RRBs (Short Term)	105 3	180 4	273 1	381 9	509.4
INDIRECT FINANCE: Scheduled C. Bks. (excluding RRBs)	733 4	998.3	1,151.8	1,206.4	...
RRBs.	12.7	16.1	21.4	23.1	26.7

SOURCE . Report and Currency and Finance 1983-84 RBI. Vol. I. Compiled from Tables in pages 201-202.

but, how to make it effective !

(A Case Study)

G. Ramakrishna Reddy
M. Rama Subba Reddy

In a special study of the functioning of the regional rural banks in the Rayalaseema district of Andhra Pradesh, the author found, among other things, procedural hurdles in the branch expansion, exploitation by middleman in securing loans, misuse and non-payment of loans, as some of the handicaps the scheme was suffering from. How these can be set right, they suggest solution.

INDIA IS ESSENTIALLY rural India. More than 70 per cent of the population is living in Rural areas. Because of the financial hindrances, rural people are dragged in the valley of backwardness. To uplift the rural poor and for the development of rural country i.e. India, the Government of India has taken significant step to divert the attitude of the Banks from Urban Orientation to Rural Orientation, Commercial banks attitude in providing the financial assistance is limited to the short-term, medium-term and security oriented. Thanks to the Government of India for the decision taken to establish the Regional rural banks to provide the assistance in short-term, medium-term and long-term advances to the agriculturists, artisans and rural poor for their development activities. As a part of this scheme "RAYALASEEMA GRAMEENA BANK" hereafter referred to as R.G.B. sponsored by Syndicate Bank came into existence on 16th August, 1976. The main objective of the Bank is to meet the financial requirements of the people of small means. The bank seeks to combine in itself the merits of both co-operative and Commercial Banks, while trying to eliminate some of their drawbacks.

Share capital

The Bank is fully owned by the Government of India, Syndicate Bank and Government of Andhra Pradesh. The authorised share capital of Rs. 100 lakh is divided into 100,000 shares of Rs. 100 each. Issued and paidup capital as on 31st December, 1984 is Rs. 25,00,000 by way of 25,000 shares of Rs. 100 each. The share capital is subscribed by the Government of India, Government of Andhra Pradesh and Syndicate Bank in the ratio of 50.15·35 respectively.

Operation

The area of operation of the Bank is confined to entire Kurnool, Cudddapah districts and Giddalur, Markapur, Yerragondapalem and Bestavaripet Taluks of Prakasam District. The headquarters of the Bank is located at Cuddapah in Andhra Pradesh.

Branch expansion

As the main objective in setting up of Regional Rural Banks is to meet the needs of weaker sections of the rural population, namely, small and marginal farmers, agricultural labourers, artisans and small entreprenuers. The performance in the branch expansion of the R.G.B. is quite encouraging in scattering to rural areas. Among 162 Regional Rural Banks in the Country, as at the end of June 1984, the placement of the bank in the branch expansion is 17th. Among the 8 Regional rural banks sponsored by the Syndicate Bank as at the end of Nov. 1984, the placement of the RGB in Branch expansion is 3rd and also it occupies 3rd place among the 12 Regional banks in Andhra Pradesh as at the end of Nov 1984. In the year 1977 the bank was established 45 branches, the

number was increased to 81 by the end of the year 1980 and further it increased to 119 at the end of the 1984. The percentage of Branch expansion is 44.44 in 1978; 7.69 in 1979; 15.71 in 1980, 23.44 in 1981 and 16.66 in 1984. The District wise branch expansion shown in the following table as at the end of the December, 1984

TABLE 1

District wise net work of the branches as at the end of December, '84.

S. No. Name of the District	No of Branches	No. of Farmer Service Co-operative Societies
1. KURNOOL	51	1
2. CUDDAPAH	55	4
3. PRAKASAM	13	
TOTAL	119	8

Source: Annual Report 1984, Rayalaseema Grameena Bank

Deposits mobilised

Deposit mobilisation is the most important function in banking. Since all other functions are dependent on this activity. The deposits mobilised from current accounts was Rs. 10,09,000 by the 431 customers, Rs. 597,66,000 by the 199390 accounts through the savings bank account, Rs. 1,05,96,000 through fixed deposit, Rs 48,00,000 through cumulative deposit, Rs 1,66,97,000 through the Janakalpa deposit and Rs. 7,15,80,000 through the cash certificates as the end of December, 1984 The total deposits of the RGB's are Rs. 98 lakhs as at the end of the year 1977, and increased to Rs 548 lakhs at the end of 1980 and reached to Rs. 1633 lakhs at the end of 1984 as against the target of Rs 15.00 Crores. The placement in Deposit position of RGB is 13th, among the 162 Regional rural banks in the Country as at the end of June, 1984 and also it occupies 3rd place among the 8 Regional Banks in the country as at the end of November, 1984 Further, significantly it is placed on 3rd position among the 12 Regional Rural Banks in Andhra Pradesh as at the end of November, 1984 The per capita deposit for 1983 and 1984 is Rs. 530 and Rs 608 respectively, which means more people of small means are brought under the banking fold.

And advances made

The RGB is small mans bank catering to the credit needs of weaker sections of the rural community such as small farmers, marginal farmers, agricultural labourers, rural artisans and village and cottage industries The total advances disbursed Rs 94 lakhs in the year 1977 and extended its assistance to Rs 1072 lakhs by the end of 1980, and significantly it stood on Rs 7168 lakhs as at the end of 1984 The bank advanced Rs. 13.76 crores towards the Crop loan, Rs. 1.29 crores towards the term loans (agriculture) Rs. 1.80 crores towards term loans (allied activities), Rs. 0.51 crores to S.S.I. Sector, Rs. 1.751 crores to small business, Rs. 2.57 lakhs to consumption loans, as at the end of December 1984. The percentage of crop loan is 58 in advances of 1984 and 6 per cent to agricultural term loans, 8 per cent to Agricultural allied activities, 8 per cent to small business, 8 per cent to agricultural Jewel loans and 10 per cent to indirect finance in the same year. The placement of RGB is 13th in advances, among 162 Regional Rural Banks in the country as at the end of June 1984 and also occupied 3rd place in advances in 8 Regional rural banks sponsored by Syndicate Bank and among the regional rural banks in Andhra Pradesh as at the end of September, 1984 and June 1984 respectively. The bank extended its financial support to S.C., S.T., and physically handicapped persons through differential rate of interest scheme. The total disbursement in the year 1984 under differential rate of interest scheme was Rs 2,52,500. The bank also assisted to minor irrigation activities such as pumpsets, deepening of wells/digging of new wells and to Gober gas plants: The bank has disbursed Rs. 19.48 lakhs under National Programme for small and marginal farmers under minor irrigation for increasing agricultural production During the year 1984-85 the bank achievement of Rs. 39.61 lakhs to the 2304 units in Cuddapah district, Rs 25.82 lakhs to 829 units in Kurnool district. Rs. 35.10 lakh to 1113 units in Prakasam district under the Integrated Rural Development Programme meant for the upliftment of the poorest of the poor.

The bank is sharing to solve the phenomina of unemployment by providing employment opportunities. As at the end of December, 1984 the bank recruited 568 employees of which 223 officers and 345 workman staff, through the tests and interviews and also imparted various training programmes to 274 staff members as at the end of the year 1984, to activise the higher productivity

Problems and solution

The bank has been facing numerous problems, among

More branches

Getting approval from Reserve Bank of India for branch expansion is consuming a lot of time. Hence, Reserve Bank of India has to streamline its licencing policy to fasten the growth of the bank branches.

Place for functioning

It is difficult to get suitable accommodation for banks in villages. It causes unnecessary delay in establishing a branch of the bank. Hence, the State and Central Governments should take initiative to provide accommodation wherever necessary by giving financial assistance to construct their own buildings.

(continued on page 22)

and plan rural credit better way

Dr. B. Yerram Raju

After nationalisation banks were to become agents of development in the rural areas. But, according to the author, they undertook this role rather half-heartedly. Most of the beneficiaries were enlisted just to fulfil the targets. They were given assets which they were unable to manage. Moreover, some vested interests spread the notion that loans given by these banks were not meant to be repaid. How to overcome this situation? The author suggests remedies.

RURAL DEVELOPMENT IS an endogenous process involving a multi-dimensional effort by a variety of institutions. The beneficiaries of the development process have a distinct role to play. In other words, unless participative and corroborative efforts combine, the process is difficult to stabilise. These efforts can be categorised into a few distinct phases :

1950-60 : Community development programmes—organisational innovation for providing extension support to development

Phase II : Simultaneously, sectoral developmental programmes like the IAAP, IADP, and HYV were introduced using the extension supports already created in selected areas ushering the green revolution.

Phase III : Realising that these programmes reached only those people who had the ability to command the inputs and services during the IV Plan period, structural interventions in the shape of the SFDA, MFALDA were planned, aimed at the betterment of the specific target groups like the small and marginal farmers and agricultural labourers. This was precisely the time when, as a result of nationalisation of major commercial banks, the banks were establishing their retail outlets in the interior rural areas (1969-74). The Government, because of its failure to reach these target groups on its own, felt that the commercial banks, atleast those in the public sector, should be inducted into the rural investments. It was also felt that banks, by their very nature of business would be in a better position to fund the beneficiary-oriented programmes because of their concern for the money that would be expended as credit. At the same time, the government was aware that the banks were ill-equipped to identifying these target groups. Hence this job was sought to be done by the SFDA|MFALDA|ITDA|HADA|DPAP etc. As there was also an apprehension that the banks, which till then, were commercially oriented, would not be able to draft viable schemes for less viable or potentially viable target groups. So even scheme formulation was entrusted to these agencies.

A new role for banks

Consequently, two of the prerequisites of a good lender, viz., knowledge of the beneficiaries of credit and knowledge of the schemes became a big cipher The third important characteristic of a good lender is his knowledge of the area. To the extent the branch operated in a limited area, the operating personnel tried to acquire the knowledge of the area. A few of the public sector banks also programmed structural interventions and organisational innovations like the Agricultural Development Branches, Rural Development Branches, Gram Vikas Kendras, etc. The Reserve Bank of India also stipulated the optimum operable distance of a bank branch at 16 Km. radius Even so, there was no matching of the knowledge of the area with the scheme and the beneficiary.

In order to subserve the main objectives of

nationalisation viz., setting right the regional imbalances and enabling the poorer sections of population to have easy access to credit as a major input of development, the Gadgil Committee recommended Area Development as a major plank of banking strategy and the Nariman committee recommended IEAD BANK scheme as a means to achieve it. Each district was accordingly allotted to one identified bank for purposes of developing it.

Taking the banks to people

During the first phase, the attention was more on branch expansion into the unbanked and underbanked areas—with the motto—"let banking be within the reach of the people." The second phase commenced with the micro-level credit planning exercises to make banking really reach the poor. From the reactive role they were to move to a proactive role. Each of the lead banks carried out impressionistic socio-economic surveys to know the infrastructural and credit gaps. Banks were new to this experience Some banks did on their own, some engaged outside consultants and some others experimented with a mix

During 1974-79, banks formulated the first round of credit plans with community development block as the unit of development But the blocks did not have information about themselves. Taluk level information was adopted to the block level with a few corrective coefficients. Sector-wise, bank-wise credit deployment was accordingly planned While doing so, the then parametres that were to be considered were .

(a) Rural, semi-urban credit-deposit ratio to be reached—60 per cent.

(b) Credit for the designated priority sectors—33-1|3 per cent subsequently raised to 35 per cent to be attained by March 1980.

(c) Credit deployment for weaker sections under differential rate of interest (DRI) scheme, i e, at 4 per cent interest per annum to be at 1 per cent of the previous year's outstanding credit. Such planning was considered necessary under the astute presumption that credit was not an unlimited commodity and that it had to be evenly distributed among different regions and among different sectors consistent with the national plan goals.

A half-hearted effort

The plans so prepared were to receive the assent of the District Consultative Committees (DCC) consisting of the representatives of all the financing agencies, the government agencies, the RBI and the then ARDC, with the District Collector as its Chairman. These DCCs were to be the part of the District Development Plans (DDP). While the credit planning was done on the basis of promises relating to provision of infrastructure by the government agencies, the latter was never monitored at the DCC vis-a-vis the credit targets. Secondly, the commercial banks' information system was not attuned to reveal data on disbursements. They were giving information relating to outstandings sector-wise which were historical in nature (disbursements + interest and other charges-recoveries). The format devised by the Government of India for monitoring the data was not serving the purpose of reviewing the performance of banks sector-wise and block-wise The banks concerned did not view this exercise of either formulation or implementation of the plans as any useful exercise. It was felt as a botheration of the Lead Bank Officer (LBO) and his boss sitting at the Head Office. The district administration was wont to review the quantitative achievement of the targets. Later, the Gutta Committee revised the monitoring format which only widened the confusion of the field level person while furnishing the information about the implementation of the Plan.

Uniform guidelines

The third stage in the Lead Bank Scheme commenced with the RBI prescribing uniform guidelines for preparation of credit plans from the second round onwards. These guidelines were the off-shoot of the consolidated recommendations of the various District Level Review Meetings specifically convened during September—November 1979 all over the country (DLRM) which latter became half-yearly rituals. Task forces at the district level were constituted for proper formulation of the credit plans which subsequently took the shape of the Standing Committee of the DCCs These guidelines specified the norm of assessment of short term credit skewed in favour of small and marginal farmers. The informative format on the LBS was again revised by the Kusumlata Mittal Committee providing for scheme-wise, block-wise and bank-wise disbursements during the credit plan period as also data on the 20-point economic programme.

The Credit Plan became an allocative exercise between blocks, banks and schemes while the review of implementation, because of the lack of data on the prescribed format, became a review of sector-wise financial targets The Credit Plan was also to contain a shelf of economically viable schemes for the field level functionary to draw upon for implementation. This meant that the Plan was to fill the gap of knowledge of schemes supposed to exist in the operatives. But several of the schemes in the shelf were mechanistic, inconsistent with the local potential and sometimes away from the norms prescribed by the RBI. They turned out to be schemes conforming to the security norms and not viability norms.

The Third Round of Credit Plans laid emphasis on a wider dispersal and the IRDP and other anti-poverty programmes have come to occupy prominence. The DRDAs were created. In order to provide for certain environmental changes and thus afford flexibility, the

DCPs were divided into the Annual Action Plans and these were sought to be monitored. Quite a few of the State Governments designed some special programmes which formed part of the priority sector credit but which did not find a place either in the DCPs or AAPs and pressures were brought on the banks to implement them through the lever of State Government deposits. Chasing the targets, emphasizing only on sponsored programmes, discussing only credit deployment with little reference to the relevant infrastructure, etc., have watered down the quality of lendings to the poor. The DCCs were viewed as ritualistic exercises by the bank representatives who were attending those meetings. No lessons were drawn from the past, although review exercises through the DLRMs became a half-yearly feature. That part of the DCP which was covering other than the target groups of the sponsored programmes, was never a subject matter of discussion. There was also a mismatching of the physical and financial targets although both were either achieved or exceeded.

Monitoring and review forums

Block Level Consultative Committee (BLCC)—at monthly intervals, Standing Committee of the DCC—at monthly intervals, DCC at quarterly intervals DLRMs at the half-yearly intervals, and the State Level Consultative Committees at the half-yearly intervals are the forums meant for monitoring the implementation of the DCP, AAP, IRDP and other sponsored programmes. The financing agencies were not able to furnish the data required which hampered the monitoring exercises. Many top functionaries of the banks feel that 40 per cent of the total lendings are consuming 80 per cent of the time through these forums and they tried their best to optimise on their time. Consequently, the grassroots level managers, who were accustomed to reflect in their work performance the parametres they were being judged by their bosses, achieved the targets quantitatively. The concern for the beneficiaries of the various programmes in the DCPs was missing from both the financing and governmental agencies The development that took place in rural areas with credit as lever, was not so much a push for development as a pull for development.

Role of RBI and NABARD

The Lead District Officer of the Reserve Bank of India and the representative of NABARD who attend the DCC are generally silent spectators as they carry with them a feeling that whatever clarification they give will become a policy and that their organisation will make them accountable for such pronouncement. Silence is golden for them. They aver that they are giving their moral support to the bankers. To quote an instance which repeated itself in every DCC all over the country, the RBI stipulated that the Government agencies should present to the DCC the arrangements they have made for provision of infrastructure proposed in the DCP. When this was not being presented year after year and when only quantitative targets were being reviewed, is it not the responsibility of the RBI to pull up those agencies in the DCC? It invariably transpired that they did not want to do anything unpleasant. The DCCs, therefore, became forums where pleasantries were being exchanged. Likewise, when the banks were representing that absence of land records was coming in the way of implementation of the Minor Irrigation Schemes, the NABARD and the RBI should have prescribed a time-frame for the district administration to make available the records. But when the banks were being pulled up for not reaching the targets on such counts as well, the RBI and the NABARD representatives were silent.

Instances were not uncommon when the District Collectors who were far junior and less experienced than the Regional Managers assumed the role of a super boss and made some umbrageous remarks irking the latter. In a few such instances, the RBI did interfere through appropriate interaction with the concerned State Government Many bankers confessed that they would not like to have a rough weather with the district administration whatever be the lapses of the latter, lest they should loose their share in the deposit cake. As a result, they missed the wood for the trees.

Role of agencies and beneficiaries

Most of the beneficiaries who have come into the fold of the banks lately, have come not because either the banks or the bureaucrat liked them, but because the plan targets had to be achieved. Secondly, these target groups are given assets which could not, perhaps, be managed by them. Thirdly, there has been a conscious education in the rural areas by certain vested interests that the loans given by the banks are government loans issued at their instance and that they need not be repaid. The Government and the people's representatives did little to erase this impression. On the other hand such feelings have been further fuelled by the populistic measures adopted by the State Governments writing off either loans or interest or both issued by the cooperative agencies. Fourthly, because of limited staff to man the branches in rural areas for a reasonably good length of time, there is little extension effort on the part of the banks to counter such malicious propaganda by the vested interests. Contact with beneficiary or groups of beneficiaries at the frequent intervals as possible has been the severest casualty.

Suggested remedies

ONE

The DCPs should be prepared coterminus with the VII Plan. Instead of reviewing the AAPs at the Jan.—Dec intervals, they should be reviewed at April—March levels. Even the branch budgets should be

prepared and reviewed at the financial year end. This will set at naught any statistical gimmicks that the Banks are wont to do.

TWO

At every DCC, the infrastructure provision should be reviewed and the RBI and NABARD should be vested with the authority to direct postponement of implementation of any scheme that did not have the required or matching infrastructure.

THREE

Asset monitoring committees should be constituted at the Block level by the Standing Committee of the DCC. This committee should have one Commercial Bank representative of the Block (relevant to the activity) and one representative of the cooperative agencies. They should visit on a specified day in a week a sample of beneficiaries to find out the condition of assets financed, how productive they are, the extent of incomes generated by these assets and suggest agency-wise time-bound remedial action under advise to the Standing Committee of DCC which meets monthly once under the Chairmanship of DCC. The suggested action should be monitored thereafter by the Standing Committee at monthly intervals Once the Standing Committee accepts the solution suggested, the agencies should be made accountable for the actions that should follow. This will improve the quality of lending It is not that credit per se will lead to development of people Credit is just one of the many inputs in the wheel of development.

FOUR

Every DCC should review physical and financial achievements under the AAPs as a totality and not merely the sponsored programmes.

FIVE

Subsistence finance should be viewed as distinct from Development finance. Banks cannot be expected to indulge in the former If there is no rise in the incomes from the assets financed by the Banks, the recycling of funds will naturally come to a grinding halt. It, therefore, becomes necessary to examine the viability of investments from the points of view of the ability of the beneficiary to maintain the asset in useful and productive condition during the life of the asset, the infrastructure provided|proposed to enable him to do so and the size of the investment The size of investment, if limited to a loan of Rs. 5,000 in the primary and tertiary sectors and Rs. 25,000 in tertiary sector, is likely to be a hindering factor for assessing the viability. The Banks and the sponsoring agencies should be able to decide on the size of the investment independent of security norms and thus, enable the security norms to flow from the viability exercises. An unviable scheme cannot be called a secured lending. A working group has already been constituted by the Government of India to examine the Administrative Machinery for implementing the IRDP. It is desirable and necessary that the anti-poverty programmes aimed at giving booster doses specify the following factors for properly identifying the beneficiaries for such doses, in as much as people who are already indebted are to be covered again for provision of assets :

(i) Beneficiaries who have been given productive assets which have not generated adequate incremental incomes to enable them to cross poverty line.

(ii) Beneficiaries who have defaulted due to the defective scheme formulation in the earlier plan.

(iii) Beneficiaries who have failed to implement the scheme because of the defect of either sponsoring agencies or the Banks; and

(iv) Beneficiaries, who have wilfully defaulted to the Bank.

The identification machinery should guard against the last category sneeking into the other three categories and cornering the scarce resources both in terms of credit and subsidy. Unless categorical directives are given for identifying beneficiaries for booster doses, it is very likely that pressures will be mounted against the banks in the same manner as hitherto and the latter will be made scapegoats for defective implementation of government sponsored programmes subsequently.

Law against drug trafficking enforced

The Narcotic Drugs and Psychotropic Substances Act, 1985 has been enforced with effect from November 14, 1985.

The new comprehensive Act provides for deterrent punishments against trafficking in drugs offences both internal and international. The maximum punishment for offences under the law is rigorous imprisonment for 10 years which may extend to 20 years and also a minimum fine of Rs. 1 lakh, which may extend to Rs. 2 lakh. In case of repeat offences, the Act provides for a minimum punishment of 15 years of rigorous imprisonment extendable to 30 years and also a minimum fine of Rs 1.5 lakh, extendable to Rs. 3 lakh Besides, the Courts have been empowered to impose fine extending the limits of punishments in the Act

As for offences relating to cultivation of cannabis and Ganja, the maximum punihsment is five years of rigorous imprisonment and a maximum fine of Rs. 50,000. For repeat offences in this regard, the term of rigorous imprisonment may extend to 10 years and fine upto Rs. 1 lakh. These limits can be extended by the court by recording reasons in the judgement.

With the enforcement of this law drug abuses and traffickings are expected to be curbed in the country.

The vision of Nehru's scientific humanism

A. Ranganathan

The author here projects the philosophy of scientific humanism as envisioned by Jawaharlal Nehru. He says it is intellectually stimulating as it does not believe in the finality of a dogma. It is the philosophical equivalent of the idea of "one world". It also enables us to realise that the future of man lies in himself and not in the stars. Nehru's awareness of scientific approach and temper are a process of thinking, a method of acting and associating with our fellowmen. This also underscores his deep love for humanity, a quality noticeable in different facets of his life and endeavour. □

IN ONE OF his most celebrated pronouncements Sir Julian Huxley suggested that the philosophy of UNESCO should be 'a scientific world Humanism, global in extent and evolutionary in background'. The philosophy of humanism is global in its sweep since it surveys the entire humanistic heritage of mankind (this tradition which can be traced in the ideas of Confucius, the Buddha, Epicurus and Lucretius, has been transmitted to us through the sceptics, the Encyclopaedists and generations of gifted free thinkers like Paine, Shelley and Bertrand Russell) and evolutionary since it is a naturalistic faith based on the belief that man 'is to be the instrument of further evolutionary progress on this planet'. This is compatible with the central thesis of A.I. Oparin's epoch-making work *The Origin of Life on the Earth* that life may exist at different points in the cosmos and not merely on earth—a naturalistic view of the universe leading to the belief that man can derive the maximum happiness out of life on this earth. Interestingly enough, this belief in the primacy of the naturalistic imagination has been interpreted in terms of piety in George Santayana's *Reason in Religion* visualised poetically in George Meredith's *Meditation under the Stars* and expressed artistically in Nehru's *The Discovery of India.*

Nehru's vision of humanism

Nehru's philosophy, whether we view it now as a confluence of the streams of Gandhian ethics, Indian sensibility and Western liberalism, as a transition of and in cultural values, as a dissenting view of the Gandhian theory of trusteeship, as a continuation of the tradition of Raja Ram Mohun Roy's scientific humanism, or as a part of the process of the fusion of disparate materials into an artistic re-creation, matters less than the vision which inspires it. This vision pervades Nehru's writings with three recurring themes. They are major themes, and of relevance to us today. First, a humanistic reassessment of the goals of economics, to highlight the quality of life.

'When Adam delved and Eve span

Who was then the gentleman ?'

The many-leveled meaning of this mediaeval folk verse has been explored in several literary, artistic, and sociological works over the centuries such as Shelley's *Mosque of Anarchy,* Goldsmith's *The Deserted Village,* Charles Dickens' *Oliver Twist,* Markham's *The Man with the Hoe,* Zola's *La Terre,* Van Gogh's *The Night Cafe* and Veblen's The *Theory of the Leisure Class.* Today, this approach is gaining more and more ground in the new area of humanistic economics. Indeed a small footnote to the history of intellectual freedom is the fact that the most original economic thinker of the twentieth century, Maynard

Keynes, worked out a humanistic interpretation of the methodology of political economy.

In one of his Essays in Persuasion entitled 'Economic Possibilities for our Grandchildren', Maynard Keynes wrote : "When the accumulation of wealth is no longer of high social importance, there will be real changes in the code of morals We shall be able to rid ourselves of many of the pseudo-moral principles which have hag-ridden us for two hundred years, by which we have exalted some of the most distasteful of human qualities into the position of the highest virtues". Similarly Nehru, who was influenced by Tawney, emphasized the ideal of 'service to the community for the common good' as an antidote to the mere pursuit of money as an end in itself. He reiterated this theme in *The Discovery of India*. "The real problems for me remain problems of individual and social life, of harmonious living, of a proper balancing of an individual's inner and outer life, of an adjustment of the relations between individuals and groups, of a continuous becoming something better and higher, of social development, of the ceaseless adventure of man".

His pragmatic socialism

An undue obsession with profits impoverishes the quality of life and results in a distorted picture of the resources of the educational, scientific, and cultural estate of a country. Likewise, a mechanical preoccupation with the one-dimensional GNP ignores the aesthetic implications of freedom and contributes to an inaccurate assessment of a country's rate of growth, which is actually derived from a delicate multi-dimensional balance of material goods and non-material needs. Here it is interesting to remember that Nordhaus and Tobin waltzed through the egregious follies of the GNP before arriving at the perspectival vistas of the measure of economic welfare (MEW). It is equally interesting to compare Keynes's philosophy of humanistic economics with Nehru's pragmatic socialism. Both anticipated the concept of the 'multidimensionality of human values', which has been developed by such contemporary economists as J. K. Galbraith, Gunnar Myrdal, Robert Heilbroner, Walt Whitman Rostow, Walter A. Weisskopf, and Kenneth Boulding. Both wished to free society from an excessive concern with the money-motive And this is the theme that is strikingly illustrated in works like Galbraith's *The New Industrial State, Economics and the Public Purpose, and The Age of Uncertainty*.

His vision of human development

The theme of technology is recurrent in most of Nehru's speeches and writings. We are living at a time when the 'know besters' of today are challenging the concept of individual freedom. And it was characteristic of Nehru that he visualized the possibility of considering human needs in relation to man's total being. For he argued in his *Azad Memorial Lectures* that "it is not possible to solve the problems of the nuclear age with the conventional approaches of yesterday. Neither in politics nor in economics can those conventional ideas yield satisfactory results". Again he was quick to point out that the concept of technological advance cannot be regarded as an end-product of the systems view of planning. Moreover, he did not dismiss it as an exogenous variable. Above all, he perceived it as recognizable hue of the wider spectrum of the human condition.

His disbelief in orthodoxies

Nehru's rejection of a belief in institutional orthodoxies is reinforced by the final Nehruvian theme. However, Nehru did not allow his naturalistic attitude to influence his aesthetic judgment. To cite an example, Nehru could effortlessly undergo what Coleridge termed "a willing suspension of disbelief". In directing his attitude towards the aesthetic foundations of Buddhism. And more importantly, the charm of Nehru's The Discovery of India resides in the fact that he avoided the mustiness of the orthodox commentaries and let light and air into the discussion of Indian philosophy. For instance, the very tentative nature of Nehru's comment on the chain of speculative reason in ancient India lent itself to artistic expression : "At whose behest doth mind light on its perch ? At whose command doth life, the first, proceed ? At whose behest do men send forth this speech ? What god, indeed, directed eye and ear ? And again......Why, and in search of what, does the water run and cannot stop its flow even for a moment ....There is no humility about all this quest, the humility before an all-powerful deity, so often associated with religion". It is the triumph of mind over the environment..........In a morning prayer the sun is addressed thus : "O Sun of refulgent glory I am the same person as makes thee what thou art !" What superb confidence !"

Seen in historical perspective, the concept of intellectual freedom is derived from the concept of scientific freedom. Harold Laski in his *Liberty in the Modern State* remarked that "those who have fought for the fight to think freely in theology or the natural sciences are not certainly less the ancestors of political freedom" and went on to add that without "Bruno and Galileo there would have been neither Rousseau nor Voltaire". It is also interesting that Arthur Koestler has argued in *The Sleepwalkers* that the dilemma of our time is rooted in the split between religion and science. However, in the final analysis, it is a conflict between humanism and superstition in its religious and ideological forms.

Today the totalitarian state has taken the place of the mediaeval College of Cardinals which persecuted Galileo. Indeed, Dr. Herman J. Muller, N. L., expressed his considered view that 'in the light of modern scientific knowledge Lysenkoism must be termed a superstition, as much a superstitition as the belief

that the earth is flat'. Again the special theory of relativity and the quantum theory were not immediately accepted owing to a streak of conservatism even in the scientific community of the liberal West.

His scientific humanism

According to Nehru, the philosophy of scientific humanism constituted an answer to many of the world's needs—educational, economic, scientific, cultural and political. As a philosophy it is intellectually stimulating, since it does not believe in the finality of a dogma; it is spiritually satisfying since it rejects the supernatural belief and acts as a bridge between nations. It is the philosophical equivalent of the idea of 'One World', viewed as a scientific process of continuous evolution in this rapidly expanding universe of explorers and astronauts. It also enables us to realize that the future of man lies in himself, and not in the stars, which in any case produce the heavy elements that we are made of !

To explain the philosophy of scientific humanism on which Nehru's very personal identification with man revolved, it is necessary to return again to his awareness of the scientific temper. And he explained this awareness in *The Discovery of India* : "The scientific approach and temper are, or should be a way of life, a process of thinking, a method of acting and associating with our fellowmen...... This scientific temper points out the way along which man should travel. It is the temper of a free man". It is this awareness that underscored Nehru's deep love for humanity—a quality which may be traced through the different phases of his life and endeavour. ☐

(*Continued from page* 15)

Suitable staffing

Eminent and experienced employees are not willing to serve in villages, owing to improper infrastructural facilities, like education to their childern, Hospital and Recreation facilities. Hence the lead bank and the state Government have to take necessary steps to provide proper infrastructure in villages.

Real illiteracy

Being illiterate, villagers have to face number of problems in getting loans from the bank, and forced to see the middleman to understand the regulations and lengthy procedures of the bank. Some times bank itself delayed granting loans, to get approval from the Head Office. All these problems will add to increase the burden of ryot in the form of cost of credit.

Hence the bank has to streamline and simplify its procedure to reduce the cost of credit to be borne by the customer.

Misuse of loans

Another problem is, the borrowers are misusing these loans, by spending on unproductive purpose hence the very purpose of the loan is not served. We can avoid this by making villages free from debt, and granting loan in appropriate time.

Recovery of loans

Loans are not recovered from ryots intime, due to natural calamities (over or under monsoons) or voluntary evasion of loans. As a result, overdues of the bank will increase and they are unable to reissue the loans to the needy. For this, the local government has to help the bank in collection of bad debts.

Inspite of its problems and hurdles the services of RGB are unforgetable. Syndicate Bank, the lead bank has to take risks and initiative for the development of the Districts comes under its area of operation, through the development of its villages. ☐

More irrigation potential to be added

The irrigation potential in the Seventh Plan is to be enhanced to 80 8 million hectares from 67.9 million hectares of irrigation potential in 1984-85. Of this, the utilisation of the irrigation potential is to be increased from 60.4 million hectares in 1984-85 to 71.3 million hectares.

The share of major and medium irrigation potential to be created during the Seventh Plan will be 34 8 million hectares and that of minor irrigation 46 million hectares. Of the total potential of 80 8 million hectares, irrigation utilisation is to be 71 3 million hectares by the end of Seventh Plan. The share of irrigation utilisation in major and medium irrigation sectors will be 29 2 million hectares and that of minor irrigation 42.1 million hectares

Bombay high to maintain the tempo in the Seventh Plan

The Bombay High oil field, which is currently producing at the plateau rate of 19-20 million tonnes per year is expected to continue to produce at that rate during the Seventh Plan period.

To avert decline in the production of oil from the Bombay High, measures like pressure maintenance by water injection are being undertaken to maintain the plateau rate. Artificial lift methods will also be resorted to. At a later date enhanced oil recovery projects are being contemplated to prolong production from the field for as long a period as possible.

According to present indication, Bombay High oil field is expected to produce crude oil and associated gas at a slowly depleting rate till about the year 2010 However, more reserves of oil are expected to be added in the meantime.

Monitoring the monster projects

L.C. Mahajan

Once planning is over, implementation starts and then one comes across problems and difficulties in carrying out the schemes. Monitoring helps to identify the slippages, constraints and areas requiring corrective action. The author emphasizes that monitoring is all the more essential in case of big projects, for their early execution and for avoiding cost over-runs. He explains here the complete process and mechanism of monitoring.

PLANNING IS CONCERNED with the achivement of predetermined development goals enshrined in the Plan document, within the overall Plan. The consummation of the Plan document lies in its implementation. In actual practice there is a gap between planning and implementation. The slippages in the implementation schedules have in most cases become a normal feature resulting in cost over-runs To help identify such slippages and to initiate timely action for corrective measures, the need for monitoring as an integral part of Planning and Implementation process, has become self-evident

Monster projects

The Plan document is consummated through various policies, plan schemes, programmes and projects in the public sectors of the Central and State Governments as well as in the private sector. Herein monitoring of the Central sector projects alone is discussed. There is plethora of plan projects and schemes of different sizes forming part of the Central and State Plans. The sizes of the projects vary from about a few lakhs of rupees to hundreds of crores in different sectors of the economy all over the country. Projects costing over Rs. 100 crores may be named as 'monster projects' in the sense that they have far reaching tentacles also called the forward and backward linkages. The failure of the monster project adversely affects the progress and performance of the projects, forming backward linkages, because the demand for their output|supply gets affected inflicting costs of capacity under-utilisation. Similarly in respect of the forward linkages, supplies from these projects do not become available to the projects in the downstream. All these failures have wide ramifications affecting the growth of the 'economy'. For example, in case of implementation of a thermal power plant, the backward linkages include coal mines working, transport system, main plant and ancillary supply industries etc., and the forward linkages include the construction of transmission lines, power supply for industrial and domestic sectors, rural electrification, etc. etc. Thus the need for timely completion and execution of the 'monster projects' can be well visualised. The project level monitoring is basd on the use of modern techniques such as PERT|CPM.

Modern techniques

Periodic monitoring should be linked to the PERT|CPM analysis at the time of plan formulation and its execution. For chalking out the construction phase of a project, role of PERT|CPM techniques of construction management is quite important. Network technique is quite useful and helps the project managers to minimise the chances of schedule slippages, cost over-runs and contractual difficulties. Network technique is known under different names such as programme Evaluation and Review Technique (PERT)

Views expressed here in the article are those of the author and not necessarily of the Planning Commission where he is working

or Critical Path Method (CPM). These methods are conceptually very similar. Network techniques refer to the method of planning, scheduling and control of projects especially major projects which are complex in nature.

Critical Path Method (CPM) is a useful technique for project implementation. It is a technique concerned with finding the least cost way of carrying out a task which consists of a number of activities, at least some of which have to be carried out consecutively. Main application of this technique is in the sphere of planning|controlling construction programmes for large infrastructural and industrial projects viz power stations, railway lines, oil refineries etc. This technique works by first setting out the ways in which activities are related and then to find out the length of time required for completion of each activity.

Any sequence of activities which must be carried out consecutively defines a path and the time taken to complete all the activities in a path is simply the sum of the separate activity times. The *Critical Path* is then the path with the longest completion time. It is critical in the sense that its length determines the time required by the whole task. Other paths which are not critical can be 'fitted around' the critical path in such a way as to reduce costs. The main effort at reducing activity time should clearly be directed at activities which are on the critical path. This approach is used to develop realistic schedules based on a knowledge of resources required and the resources available and this ensures the feasibility of meeting directed schedules.

Monitoring process

It is necessary to ensure linkage between targets and resources so that the targets are physically achievable within the resources allocated|provided-on reasonably realistic bases. The basic purpose of monitoring is to identify the areas requiring corrective action in order to ensure successful implementation as per the schedules. The monitoring function involves (i) watching actual progress and performance, comparing it with the targets and identifying shortfalls, (ii) raising warning signals in advance by observing the actual physical progress of critical milestones as per the Network in terms of the scheduled dates as well as the latest allowable dates of completion and informing the decision makers, (iii) identifying the problem areas, analysing the problems, suggesting action areas, and (iv) giving feed-back of the decisions to the implementing agencies, developing data bank etc.

Monitoring may include analysis, reviewing and evaluation of the progress in terms of (a) Financial-costs and expenditures, (b) Physical—production performance and physical progress|achievements, (c) Time for completion of various activities including administrative activities and sanctions, (d) avoiding pitfalls experienced in similar situations, and (e) incorporating procedures of advantage in reducing cost and time frame obtained from experience elsewhere.

Level of monitoring is quite an important aspect for it to be really effective. It may be at the level of the project or at the Central Ministry level or at the level of the Planning Commission, Bureau of Public Enterprises (BPE) or the cabinet Secretariat. The reviewing authority incharge of monitoring should be powerful enough to review action taken in respect of the action areas identified by the monitoring organisation. It may be in the Ministry in case of Central sector projects.

Where abnormal difficulties are encountered requring policy directions, the Cabinet Secretariat may coordinate by convening high level meetings of Committees of Secretaries and the appropriate cases requiring the attention at the highest level may be taken up with concerned Cabinet Committees for necessary policy directions|orders. This should preferably give consolidated feed-back to the Prime Minister's Secretariat in respect of the 'monster projects'. Similar system may be relevant in case of the State sector projects. Coordination should preferably be at nationally non-biased levels as in the Planning Commission and the Cabinet Secretariat's Project & Coordination Cell. Outstanding official status of the monitoring authority is a prerequisite for its success.

Monitoring parameters and mechanism

For ensuring effective project implementation monitoring is required in terms of the following parameters viz project cost estimates (originally approved, latest approved|revised and anticipated), commissioning dates (orginally envisaged, latest approved|revised and anticipated). Monitoring of these parameters gives an idea of the cost and time over-runs in respect of the projects under review. This type of monitoring may be undertaken for all projects, big and small in the Central, State as well as in the private sector.

However, for intensive monitoring for keeping a close watch on the project implementation schedule as per PERT Chart of major projects, status of the critical milestones of the constituent events| activities of the project can be regularly reviewed on month to month basis vis-a-vis the scheduled dates of completion as well as the allowable latest dates. In other words, monthly stock taking can be done in terms of the critical milestones achieved during the month out of the total due during the month. Having identified the slippages, the reasons for the delays can be diagnosed to fix up accountability. Subsequently, action areas can be listed in terms of the input supply problems in respect of the major project inputs and supplies. After identifying the action areas the responsible authorities can initiate action|dialogue with the corresponding authorities of the sectors responsible for causing delays with a view to fix up accountability. In other words, monitoring should be linked with the review

and problem solving mechanism at the concerned decision making levels for initiating action.

Further updating of the PERT networks can also become necessary in many cases where the annual Plan allocations fall short of the proposed outlays, on which the original PERT charts are based. Similarly, in view of the prevalence of the inter-linkages among projects, slippages in the backward or forward projects may necessitate further revision of PERT schedules. In other words, this would require continuous updating the PERT Charts.

Under this type of monitoring, regular and timely inflow of data is inevitable|unavoidable at meaningful intervals say on monthly basis so that the impeding problems could be identified and timely corrective measures initiated. In case of longer reporting intervals, the monitoring remains a post-facto ritual having historical significance For ensuring monthly reviews, the need for fast data collection, analysis and dissemination is imperative. For this, computerised information systems need be developed involving wide use of telex|telegraphic data receiving and computers for data processing facilities

Computerised monitoring

For effective monitoring of the major on-going projects under construction, a monitoring system can be designed which can be aimed at timley identification of the warning signals for preventing time and cost over-runs and avoiding slippages in the course of implementation of major projects This can help in identifying the need for initiating timely action in respect of problem areas through inter-agency coordination.

Under this system, monthly progress reports concerning the work|milestones scheduled for the previous month could be prepared which may highlight identification of the critical problem areas for initiating timely corrective measures to ensure expeditious execution of the projects. A computerised monitoring system could be designed for expeditious processing of the data inflow for issuing timely warning signals. The monitored output of such a report can provide a one-point review of status of implementation to the Secretaries of the Departments. Heads of the Public Undertakings concerned and the Chiefs at the responsible and accountable level of individual project managements Wherever inter-departmental coordination is called for, the concerned Secretaries and senior officers can meet and discuss for methods to overcome or reduce the slippages.

Conclusion

For planning to be effective, successful implementation of Plan programmes and schemes is essential. This can be possible if execution|construction schedules are judiciously worked out taking into account the prevalent supply constraints, financial problems, administrative and organisational cultures etc. Regular monitoring of the progress of implementation throws up timely signals to initiate corrective measures through high level coordination and fixation of responsibilities whereby avoiding dilly-dalling action and counter allegations on the supporters in the upstream and the users in the downstream.

For monitoring to be effective, on the one hand, it should be regular at short intervals, say, at monthly intervals to assess the diversions|variation between the planned activity network schedule (PERT|CPM) and the actual on ground achievements of this schedule; and on the other hand, monitoring and reviewing authorities should be quite powerful and at executive decision making levels. This will facilitate quickker identification of problem areas to initiate timely corrective measures and would go a long way in narrowing down the proverbial cost and time over-runs with the attendant multiple effects on the forward and backward linkages

Finally, indifference in the execution of the plan projects should be seriously dealt with through closer and regular analytical monitoring. This will create the required awareness in the minds of both the public and the official machinery about the concern of the Government in the matter. Project implementation need to be enforced on realistic and pragmatic basis to be effective. While slippages in project implementation, for reasons of underfunding and physical bottlenecks, can not be wished away, it can be eliminated or considerably reduced only through systematic monitoring of implementation, strictly dealing with those responsible for the delays and providing necessary coordinated corrective inputs.

Keeping in view the urgency of the timely completion of large sized infrastructural and interlinked projects in order to avoid costly time and cost over runs, the Central Government has recently set up the new Ministry of Programme Implementation under charge of a Cabinet Minister since October, 1985. The Ministry, inter alia, has been allocated the functions regarding Infrastructural and Projects Monitoring, Programmes and Public Enterprises Monitoring of the Twenty Point Project Programme, Inspecting Technical advice etc

Finale

It is hoped that the recent setting up of the Ministry of Programme Implementation would go a long way in narrowing down the proverbial cost and time overruns, having forward and backward linkage effects on other projects. This is bound to accelerate the pace of economic development

Industrial progress sans pollution

P. Bhattacharyya

The requirement of water has been increasing on as fast a scale as those of energy resources. It may turn out that ordinary fresh water even in near future will become a very scarce raw material on the earth. But at the same time there is no alternative to water not only for day-to-day life but also for industrial progress. The author discusses in the article the solution worked out of the problem in the Soviet Union.

WITH EACH PASSING year water scarcity is being more and more acute in the world. This has become particularly threatening for the developing countries, which have to increase the tempo of industrialisation and irrigation programme, and, at the same time, maintain the purity of water bodies.

Further, although the total stock of water in the world is enormous, i.e., nearly 1,500 million cubic kilometres, fresh water forms less than 2 per cent of it. Even of that small percentage of water large amount about 24 million cubic kilometres, is frozen, in the shape of glaciers.

Water for irrigation

Huge amount of water goes to the complex irrigation systems. Their numbers are growing as ever more arid areas are brought under irrigation to meet the growing requirement of food.

Industry also consumes huge quantity of water. For example, production of a ton of steel requires 6 tons of water, a ton of aluminium 1,500 tons and a ton of rubber 2,500 tons of water. More dangerously, the discharge of effluents from industrial and agricultural sources as also urban complexes are adding to the shortage of fresh water further. These pollute the rivers and other water bodies to a great extent. Therefore, protecting them from pollution and restoring their purity has become today a very urgent task all over the world.

Cleansing the Ganga

The Government of India has taken cognisance of this urgent problem by deciding on the purification of the river Ganga. The problem, however, does not end there. Most of the Indian rivers today suffer from acute water pollution as effluents from industries and sewage from cities are thrown into them. These rivers also pollute the coastal seas. And the cities situated near the sea coast directly discharge the effluents into the sea. As a result of all these the fish living in such waters die in thousands. In addition, apart from the waters direct, the fish population also spread diseases among the people, their consumers.

Recycling the Soviet way

Soviet achievements, in these respects, prove very relevant and constructive. More than 70 per cent of fresh water used in the Soviet Union for industrial needs are returned—after proper treatment—to the producation cycle. The switch-over of the most water-consuming and ecologically dangerous types of production to the closed recycling scheme is today the most rational way of solving the problem of keeping clean the rivers, lakes, storage lakes and seas.

The main thing now is to protect effectively water sources from chemical pollutants contained in industrial sewage. Not a single natural system can "process" them. As a result ecological equilibrium is violated and the self-purifying capacity of rivers and lakes is undermined. That is why nature-protecting measures

in the Soviet Union aim at preventing the industrial sewage from getting into reservoirs. Soviet laws categorically prohibit the dumping of unpurified sewage. Enterprises must take measures for using sewage to the maximum extent in recycled water supply and to introduce water-free and non-waste technologies.

Law against contamination

The main Act aimed at ensuring the rational use and protection of water in this country is the Fundamentals of Water Legislation of the USSR and Union Republics. Water legislation envisages that all measures ensuring the purification and decontamination of sewage dumped into water bodies for industrial and agricultural enterprises built or modernised there must be taken before the commissioning of production capacities.

Water protection

The campaign for clean water of rivers, lakes and reservoirs in the Soviet Union is treated as a major economic problem. More than 600 water-protecting projects have been built at industrial enterprises in the basins of the Volga and Ural rivers alone. These water-protecting facilities are worth about a billion roubles. Biological purification facilities have been put into operation in 20 large cities lying on these rivers. Nature-protecting measures taken in a package have considerably improved the ecological conditions of these rivers.

Over the past few years about 63,000 million roubles have been spent on nature-protecting measures in the USSR. Most of these funds have been earmarked for the creation of recirculating water-supply systems. Their introduction at oil refineries has made it possible to manage without fresh water intakes for industrial needs.

The use of recycled water at the Novolipetsk metallurgical complex, for instance, has been brought to 92 per cent, and in the transformer steel cold rolling section of the Verkh-isetsk plant up to 97 per cent.

The broad introduction of recirculating water-supply in the national economy has made it possible to save about 240 cubic kilometres of water per annum. The dumping of polluted sewage has decreased by 33 per cent. This has had a beneficial effect on the conditions of such rivers as Volga, the Moskva, the Dnieper, the Kama, the Don, etc.

Pollution control measures

The All-India Observation and Control Service attached to the State Committee for Hydrometeorology and Monitoring the National Environment exercises constant control over the pollution level of water sources. This service has about 3,500 observation stations which provide constant information on the state of water in rivers, lakes and reservoirs. Data obtained by this service are used for preparing prompt information and for estimating the conditions of the water object which is placed under observation. The observation stations in their work rely on the hygienic norms of the permissible content of chemical pollutants. For the first time in world practice the maximum permissible concentrations were introduced in the Soviet Union in 1948. Since then they have been improved constantly and represent a long list covering practically all substances and compounds which are found in waste and sewage.

Over many years of research Soviet geographers and hydrologist shave prepared the Water Cadastre of the USSR. The cadastre contains necesasry data about thousands of big and small rivers and lakes of the USSR. At the same time, the Institute of Water Problems of the USSR Academy of Sciences has determined the Soviet Union's subterranean resources. Soviet scientists have compiled a map of the subterranean runoff of the USSR—so far a unique map of this kind in the world. On the basis of these data hydrologists have given—for the first time in world practice—an estimate of overall subterranean resources for the territory of the whole country.

Sub-soil water control

In the course of these studies methods of controlling the level of subsoil waters have been evolved. This is of great importance because in some cases the very intense, unregulated use of subterranean resources may lead to the decrease in their level and even to the lowering of the earth's surface. Scientists have suggested several methods of avoiding this One of them and perhaps the main is the compensation of water stocks through the transfer of a portion of the surface runoff into the subterranean flow. The problem boils down to the replenishment of underground waterbearing horizons with surface water In Riga such a "water factory" already operates This is a filtration installation for supplying the underground horizon with water. The latter is periodically pumped there from a nearby lake. Then this water is filtrated into the underground water-bearing layer and fills the depression funnel formed as a result of the operation of water intake wells. When a certain level of subterranean waters is thus restored, this source, if necessary, can be put in storage for a while

Indo-Soviet cooperation

Soviet scientists' work in the field of studying the subterranean resources has drawn the attention of scientists of many countries. At present a bilateral agreement on cooperation between the USSR Academy of Sciences and the Indian National Academy of Sciences has been signed for the period from 1986 to 1990. It envisages, among other things, cooperation in the field of fundamental hydrogeology. This work will develop along three main lines. In the first place, according to the technique evolved by Soviet scientists the regional evaluation of India's subsoil waters will

(Continued on page 32)

Enjoy yourself, let them go to . . . .

Bhushan

This is an anecdote of a visit by a senior State official to the interior of a district to see the things for himself. He pays half-hearted attention to the woes and miseries of the rural folk, who come and try to open their heart to him. Like a State guest, he enjoys all the care and attention of the whole of the district administration. After all, who can dare incur his wrath! So, he revels in his present glory perhaps fainty remembering his not very far off past, that was full of thorns!

IT IS ROSES roses all the way. The caravan of vehicles stops at a place where district authorities have collected a huge crowd. The local authorities and leaders welcome us with sweet smelling garlands of fresh flowers, the moment we get down from the Stately State Car. We are taken to the raised platform to decorate the chairs acquired by them specially for the occasion.

Their woes

"We had no rains for the last three years Our people are starving. They have no work, because the agriculture has totally failed. The Government should open up new works for providing employment to the poor people", says one local leader in his loud voice.

"We have no water Our wells have dried up. The handpumps have stopped functioning because the water-level has gone down Our women have to walk miles and miles to bring one pitcher full of water We would request you to take immediate steps for supply of drinking water", says another local leader

"Our cattles are dying. They have nothing to eat. We have to bring fodder from distant places at very exorbitant rates. Our poor people are not able to buy fodder at that price, because they have no money. Many of them had to sell away their cattle at a very low price, just because they could not maintain them I would urge the Government to provide free fodder for the cattle in this area", says another local voice.

Their sweets !

Trays of sweets, cashew and fruits adorn the table in front of us. We are asked to have something and also to say something.

I pick up one cashew, but before I open my mouth to speak out a few words of lip-sympathy, one educated unemployed young man of the same village stands up to describe the actions and inactions of the local authorities—"There is corruption from top to bottom. Our cattles are suffering from fatal diseases but the veterinary doctor refuses to come to treat them. He wants money for his services. Whatever assistance is provided on paper to the poor people under various rural development programmes, rarely reaches the persons concerned They all go into the pockets of the various authorities Thumb impressions of poor, illiterate people are taken on registers for thousands but hardly a few hundreds are given to them How can our village ever prosper with this kind of Administration" ? The powerful voice of the youth is drowned by the noise created by the local authorities intentionally.

"Have some sweets, Sir. They are specially made for you in pure ghee—a speciality of this place", the District Collector tries to divert our attention from the erratic youth.

I take one piece. It is really delicious. But what about the hundreds of poor people thronged around us ? No sweets for them ! Their stomach is filled by these beautiful speeches made by local leaders !

Poor sympathy !

"I am really pained to see the plight of people here. We will try our best to help you people to get out of the present crisis", I say to please the poor

ever we may do to improve the lot of these people, they will stand where they are today, unless and until the District Authorities and the local leaders change their sense of values and priorities

The caravan moves further, with hundreds of voices cheering us up, fading in the background

The same story is repeated everywhere we stop The same drama is enacted everywhere, only the actors are different. Whatever be the gravity and the magnitude of the famine, we are never famished All kinds of delicacies are served to us in all kinds of scarcity conditions.

How to kill monotony !

The monotony of the programme tires me out I make a suggestion to cut short the stop-overs The State Government Officials readily agree to this and suggest that instead of wasting any more time on this, we could see a beautiful palace close by

We try to pass by a huge crowd, waiting for us to stop and listen to their grievances Seeing our evil intentions, they gherao us literally and do not let us go.

"We are getting late, so we cannot stop here" says one of the District Officers

And the endless wait !

"We have been waiting here for four hours, and you have no time to stop here ?" The village crowd gets agitated They stand in front of our cars We cannot move further, so we get down per force We listen to their tales of woe, have a bite of their special sweets and move further They are quite cordial, after we step down They don't even waste much of our time with long-long speeches

They had been waiting for four hours ! But why ! We were late by one hour, as per schedule Who asked them to wait for four hours, when one hour of waiting would have been sufficient !

These are the evils built-up in our system, I think From the District Collector to the village Sarpanch, how many levels are crossed. Everybody must have kept the margin of half-an-hour, to be on the safer side And the net result is waiting for four hours, five hours, in some cases even more I am really pained to see this state of affairs Isn't it criminal to pass them by just because we are tired of hearing the same old stories again and again

Forget them all !

The car stops in front of a palatial building This is an old palace of Maharajas, part of it being retained as a Museum and a part converted into a Five Star Hotel. We are temporarily lost in the grandeur of old Maharaja days, our filled bellies are further stuffed with all kinds of delicacies that the Five Star Hotel has to offer—an evening well passed in the beautiful and luxurious atmosphere of the Hotel We human beings, the distress sale of cattle. We forget everything, because we are not one of them. We are the privileged lot—the VVIPs Red carpets are strewn for us, wherever we go. The entire Administrative machinery of the State feels honoured to be able to look after us. And they really look after us very well After all, with a mere stroke of pen, we can give them crores of rupees. Where that money goes ? What happens to the agonies of the poor people ? Whose pockets are filled ? O, these nonsensical questions It is none of our business to ask these questions Our business is to give the privilege of pleasing us to the State Government If we are pleased with their services, we can recommend any amount to save the distress If we are not so well pleased, then, well, there are lots of ifs and buts, lot of excuses that we have learnt in the service of the Government of India

And after relaxation

After, a relaxed evening in the grand palace, we move further for our day's destination It is not a palace in the known sense But it is no less luxurious The best suite is given to us Although it is 11 in the night, the whole lot of local authorities are waiting for us Cool drinks are served to drown our fatigue Hot meals are served thereafter How many man-hours are being wasted, just for me, just to please me Does anyone keep a count of it ? No, not necessary We are all doing our duties, we are not wasting our time

It's with a difference now !

When I am left alone in my room to sleep the night off, I think I think of my present glory and my past adventures I was the same person, holding the same position, even at that time, only the mission was different When I reached the same Circuit House at 7 P M , I was offered a very ordinary suite after a great deal of persuation And then I made the mistake of asking for dinner.

"Had you ordered for dinner, during day time ?" asked the waiter.

"No, How could I ? I have just come".

"Sorry, Sir, you can't get dinner here, unless and until you tell us in advance", said the waiter rudely.

I had not booked any dinner today also Even then, it was served and served in the maximum possible courses.

These thoughts make me humble. No need to feel pride at today's glory. It is just for a day It was not there yesterday. It will not exist tomorrow.

As a human being I am not entitled to any better treatment Same officers, who will do anything for me today, at the slightest hint, will say tomorrow, as they did yesterday, "Sorry Sir, No dinner today".

"Sorry Sir, No vehicle today evening. Our drivers don't work after 5 PM".

Minimum needs programme in Seventh Plan

Yojana Correspondent

THE MAJOR THRUST of the Minimum Needs Programme in the Seventh Plan is to integrate the programme with other rural development and anti-poverty programmes in order to create necessary linkages in the delivery services. The two sets of programmes are mutually supportive and, therefore, need to be linked. Besides, some new components are sought to be added to the MNP during the Seventh Plan period. These are domestic cooking energy, public distribution and rural sanitation.

Basic inputs

The basic needs of the people identified under the Minimum Needs Programme cover elementary education, adult education, rural health, rural water supply, rural roads, rural electrification, rural housing, environmental improvement of urban slums and nutrition. These with further addition of domestic cooking energy, public distribution and rural sanitation make a full complement of the human resources development in rural and poorer sections of the people. The programme, therefore, is essentially an investment in human resources.

Outlays

The total outlays under the Minimum Needs Programme in Seventh Plan under the States|Union Territories sector is Rs. 10,081 72 crore and in the Central sector Rs. 1,464.22 crore. Of this, the outlay fixed for elementary education in States|U.T.s sectors is Rs. 1,730.45 crore and in the Central sector Rs. 100 crore. An enrolment target of 25.53 million children for formal and 25 million children for non-formal education has been fixed under elementary education during the plan period For adult education, Rs. 230 crore has been fixed in the States|U.Ts sectors and Rs. 130 crore in the Central sector with a 100 per cent coverage of adults in the age group 15-35 yea through non-formal education by 1990. The plan ou lay for rural health in the States|U.Ts sectors Rs. 1,063 35 crore and in the Central sector Rs. : crore. The target is to establish 54,000 sub-centres addition to 83,000 existing sub-centres in rural area In addition, 12,000 Primary Health Centres (PHC are to be set up besides the existing 11,000 PHCs t achieve the target fully. It is also proposed to establis 1,553 Community Health Centres in addition to th existing 649 CHCs to achieve 40.65 per cent of th target. This is within the frame of establishing on Community Health Centre for a population of on lakh or one CHC in each C.D. Block by AD 200C

The plan outlay for rural water supply i Rs. 2,253.25 crore in the States|U.Ts sectors an Rs. 1,201.22 crore in the Centre. It intends to cove all the remaining 39,000 problem villages as a priority item, after which other villages with inadequate water supply will be taken up.

A normative target of 21,157 villages has been fixed having a population of 1500 and above and 5,057 villages with a population of 1000 to 1500 for rural roads. The total outlay is Rs. 1,729.40 crore only in the States|U.T.s sector. The rural roads coverage provides for linking up all remaining villages with a population of 1000 and above and 50 per cent of the total number of villages with a population of 1000 to 1500 by 1990.

The outlay for rural electrification is Rs. 497.08 crore only in the States and Union Territory sectors. It aims at electrifying 65 per cent of the villages in States and Union Territories by 1980-90.

Housing assistance to rural landless labourers is to cover remaining 0.72 million households for allot-

ment of house-sites to achieve 100 per cent target and provision of construction assistance to 2.71 million families already having house-sites. Provision of housing assistance will cover all lanoless labour household by 1990. The assistance includes house-sites construction materials, drinking water wells for a cluster of houses and approach roads.

Rs. 269.55 crore has been allocated for environmental improvement of urban slums. The programme is designed to cover 9 million slum dwellers out of remaining 17.5 million. The coverage aims at 100 per cent urban population by 1990. This includes facilities of water supply, sewerage, paving of streets storm water drainage and community latrines. Areas inhabited by Schdeuled Castes, particularly scavengers will be given priority.

Nutrition supply will be continued to all 11 million eligible persons during the plan period Besides, supplementary nutrition programme is intended to be extended to cover all the Integrated Child Development Services (ICDS) projects. A total outlay of Rs. 1,731.74 crore has been provided for nutrition. Mid-day meal programme is sought to be consolidated and linked to health, potable water and sanitation.

Background

The Minimum Needs Programme (MNP) was introduced in the Fifth Five Year Plan to establish a network of basic services and facilities of social consumption in all the areas upto nationally accepted norms within a specified time frame. The programme is designed to assist in raising living standards and in reducing the regional disparities in development. The programme known as an essential input in human development is also an investment in human resources.

Yojana wishes its readers,

a happy new year

Village Alisisasan meets its all energy needs!

Alisisasan, a remote village of a population of 25000, is 17 Kms. from the famous cathedral city of Bhubaneswar. It is now bubbling with new hopes and activities. The villagers here have formed a Club known as "Gopinath Jubak Sangha", after the name of the local God Gopinath Dev Dew. The idea behind setting up of this Club was not to offer poojas and organise festivals but to act as a live link between villagers and development programmes of the Government of India and Central Social Welfare Board, in order to improve the living standard of the villagers. About 25 per cent of the people in the village are categorised as small and marginal farmers and 40 per cent of them belong to scheduled castes and scheduled tribes.

Recognising the enthusiasm of the villagers, the Directorate of Field Publicity and Union Bank (Main Branch) came forward to provide assistance for various economic activities to be undertaken by the villagers. To begin with the bank granted loans for 27 schemes for installation of biogas plants in technical collaboration with the Orissa Renewable Development Agency (OREDA). Loan amount granted was betbeen Rs. 4800 and Rs. 800,, depending on the size of the plant. Fifty per cent of the loan was treated as subsidy from OREDA Energy availability in the village through gobar gas plants has brought a sense of relief and happiness to the rural women □

ELCOT to manufacture latest electronic gadgbts

The Electronics Corporation of Tamil Nadu, a completely state-owned enterprise of the Government of Tamil Nadu, popularly nown as 'ELCOT' has made a big leap in the field of electronics, thanks to the liberalisation of Import-Export Policy by the Centre and the reduction in sales tax on electronics by the State.

The Corporation started in 1977, with an authorised capital of Rs. 5 crore. The first item produced was the Digital Electronic Watch. The Digital Clock Industry is now able to stand on its own. The demand for the watches has picked up and ELCOT is able to compete in the home market. Next item on production list was T.V. and then radio communication equipment. This project located at Thiruvanmuyur has already started its production in April, 1985. The VHF|UHF land mobile communication equipment manufactured in technical collaboration with GEC Marconi Company of U.K. has a very good demand. ELCOT is also making arrangements to supply the equipment for portable, base mobile and repeater operations on a turn-key basis. ELCOT hopes to enter into the production of Defence Communication equipment and also single as well as multi-channel link equipment for P &T. It hopes to produce Rs. 3 crore worth equipment every year. It has plans to produce Multi-access Radio Telephone and Multiplexed low capacity UHF ruarl radio at a later stage. ELCOT is willing to take projects on contract basis and manufacture of custom built equipment against specific orders.

Apart from these four projects in the public sector ELCOT has floated as many as 18 projects in the joint sector with private entrepreneurs. It hopes t establish itself as a leading producer in this excitin field of electronics.□

S & T survey on docotral scientists and engineers

THE DEPARTMENT OF SCIENCE & TECHNOLOGY, in a special survey on the employment pattern of doctoral scientists and engineers, has observed that as many as 91 per cent of the total doctoral scientists and engineers were employed in general services and higher education sector while only 9 per cent were employed in the industrial sector.

Another interesting observation of the suvery is that pure science doctorates far exceeded the total number of doctorates in arts subjects. And amongst pure science doctorates, those in chemistry, physics and biology accounted for more than 80 per cent of total doctorates in pure science.

Initiated in October 1982, the survey covers the period 1960-81 and is restricted to research institutions in government sector, universities, IITs and those public and private sector industries whose inhouse R&D units were recognised by the Department of Science & Technology. In all 1525 organisations were contacted but only 1138 organisations responded.

Some of the important findings of the survey are :

— The total number of doctorates produced by universities, IITs and IISC in the fields of science and technology increased from 2908 in 1978-79 to 3793 in 1980-81.

— 64 per cent of total engineering and technology Ph.Ds from IITs and IISCs were from electrical, mechanical and civil engineering during 1981. Each of these fields has more or less equal share.

— The total number of doctoral scientists and engineers employed in all sectors as reported by 1138 units, out of 1525 units contacted, was estimated at 22,055.

— Higher education sector employed 48 per cent of the total employed doctorates. This was followed by major scientific departments with the share of 37 per cent.

— Biological sciences and chemistry doctorates dominates the employment scene with 23.3 per cent and 20.7 per cent of total S&T doctorates employed respectively.

— In the productive sector industries whether public or private sector, about 50 per cent of total doctorates were employed in chemicals & fertilisers and drugs and pharmaceuticals industry.

— In State Governments, doctorates in agriculture dominates all other fields of science.

— In the industrial sector, doctorates from Indian universities were more or less equivalent to doctorates from foreign universities in the field of engineering. For major science departments, foreign engineering doctorates were more than their Indian counterparts.

(*Continued from page 27*)

be carried out. This will make it possible to establish the optimum modes of using subterranean resources which is of paramount importance for economic development For the regions of Central India hydrological parameters of water-bearing horizons will be determined. In the delta of the river Pennar, Soviet and Indian specialists intend to look into—through a system of wells—the regular features of interaction of subsoil and sea waters. In this region the active intake of sea waters takes place which has an unfavourable effect on the level of subterranean horizons. These studies will help to work the main lines of using subterranean resources □

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BOOKS

Modernising agriculture

Technological Change and Agricultural Development in India by A. N. Sadhu and R. K. Mahajan. Published by Himalaya Publishing House, "Ramdoot", Bombay. Pages 215, Price Rs. 80 00.

This book is a research study on the various aspects of benefits derived from new farm technology ever since it was adopted in 1966 As far as the distribution of the gains of new technology is concerned, the findings contained have already been borne out by so many other investigations. The new agricultural strategy has helped to increase the income of cultivators while at the same time, it has also increased inequalities of income in the farming community. Thus, income disparities have been accentuated.

One significant finding in the present study is that introduction of tractors has resulted in a reduction in the employment of labour. Regarding the resource use efficiency, the new farm technology has generated positive gains for farms of all sizes. This study supports the hypothesis that the resource use on large farms is more efficient than those of small and medium farms.

The book presents the content in two parts dealing with agricultural development and technological change, and technological change and distribution of gains. Starting off with a historical review of Indian agriculture, though in brief, one significant aspect that comes to light is that there has been slow-down in the growth of crop area in the post-green revolution period in almost all crops, except wheat. Productivity has also increased in Punjab and Haryana, followed by Gujarat, Karnataka and Jammu & Kashmir Modern inputs have, directly or indirectly, played a vital role in the growth of output.

The annual growth rate of agricultural output, particularly foodgrains, and the use of fertilisers, irrigated area, tractors and area under HYV seeds, have a significant positive correlation The correlation coefficients are positive, significant and according to expectations in the case of irrigation, fertilisers and area under HYV seeds. However the insignificant correlation between tractor and HYV seeds shows that it is not necessary to use a tractor if one is taking more area under HYV seeds.

The book contains abundant statistical data which have been scientifically analysed for drawing conclusions. The main instruments of analysis are Cobb-Douglas production functions, Lorenz Curves, Gini Ratios, Analysis of Variance and others. It is believed that a greater spread of agricultural technology will lower the variation in agricultural development in the various regions of the country. At present there are wide inter-state variations to farm mechanisation.

The authors argue that inequality of farm incomes can be reduced by rigorous and vigorous implementation of land reforms. If the existing battery of land reforms are implemented seriously, we can easily achieve the objectives of growth with social justice."

Navin Chandra Joshi

The Pilgrim's Progress

Gangotri and Gaumukh—A Trek to the Holy Source by S. S. L. Malhotra. Allied Publishers, New Delhi. Pages 223, Price Rs. 60.00.

THE AUTHOR HAS already a similar volume to his credit—"At the feet of the Badri". The present volume is not a repeat performance but too unique to be judged by a simple yardstick evolved in the light of his earlier work. It is so different and comprehensive.

It is a travelogue. The journey commences from Delhi and ends at Gaumukh, the holy source of the Ganga The write-up describes eight pilgrims progress in a racy and lucid narrative which covers not only the vivid and fascinating accounts of physical features and scenic beauties of a long terrain but also depicts day-to-day moods, behaviours and on-the-journey attitudes of the various participants who belong to middle-class families and held white-collared jobs.

A trek to the holiest of the holy shrines in the lap of Himalayas not only has a religious significance but it is also a venture into the realms of nature that unfold an aspect of its beauty The readability of this write-up lies in its monosyllabic diction and fiction-like presentation The layout is also good

For a person intending to visit the holy shrine, the book provides all the information on how to start, how to proceed, how to reach the destination and how to keep fit during the journey The book is a handy guide and very well produced

—R. P Rahi

Management in public sector

Leading Issues in Public Enterprise Management, Editors : T. L. Sankar, R K. Mishra and S. Ravishankar. Published by Himalaya Publishing House, "Ramdoot", Bombay. Pages 684, Price Rs. 275.00

A CONSPECTUS ENCOMPASSING a wide range of issues concerning the management of public enterprises (PEs) is carried out in this book brought out by the Institute of Public Enterprises, Hyderabad. The book under review dwells at length on PEs, their philosophy and policy issues operational aspects government-public enterprise interaction, planning methodology and management of technology and human resources development. At a time when more and more governments in the developing

Date..........

'orld are enamoured of the long-range virtues of ate-run enterprises on account of their employment-reation potentials and industrialisation, the book is timely addition. Though the proliferation of ublic enterprises in developing countries has been ailed as a desirable phenomenon, their performance as none too gratifying. As the factors for this ll in standards of performance were numerous and aried ranging from the diverse political and econo-ic systems prevalent in different countries, lack of ear-cut public policy on PEs and lack of commit-ent and involvement of policy-makers and mana-rs and workers, the contributors to this tome have fered remedies for reversing the slide in standards ' PEs. Dr. Y. Raghaviah scans the role of PEs the third world and has come out with a scholas-; exposition which shows that the origin and owth of PEs in the third world are conditioned by fundamentally different set of forces and circum-ances in contrast to those in western experience.

Prof. Nitish R. De discusses the crucial problem of ganisational analysis in PEs and contends that the rious approaches to organisational analysis may abandoned in favour of the energy approach. fforts have to be undertaken to maximise energy neration and preserve the energy generated.

As an important determinant of organisational fectiveness, the book identifies managerial effecti-ness and Dr. B. Maheshwari in his treatise on anagerial effectiveness in PEs maintains that this at the lowest ebb in PEs. While some positive :tion can and must be set in motion by the mana-rs of PEs themselves, the government also has to ay its part. Unfortunately, government has not ily recognised the significance of the managerial le and this has hampered managerial autonomy

Mr. V. S. Ramamoorthy's paper on emerging ends in financial objectives of PEs is a perceptive count and unmasks some startiling facts

Mr. T. L. Sankar, in his paper on "the government tecutive and public enterprises : a study of the pervisory control system" probes the extent, scope id the necessity of executive controls with special ference to the Indian experience.

Dr Jagdish Prakash in his monograph on "auto-omy and accountability of public enterprises—facts id issues" argued that for efficient operation of the ublic sector management enterprises, the manage-ent should not be made accountable to the minister or day-to-day routines. Dr Prakash blames the irrent practice under which the ministerial tentacles re spread to such an extent that the ministers ieddle not only in broad policy matters, but in iatters pertaining to personnel management, labour elations, stores and purchase policy etc.,

Dr. Udai Pareek, writing on human resources development (HRD) in PEs, says that the most ignored dimensions of HRD is the management of rewards, as in a large number of PEs, mere promotion is deemed to be one of the rewards. Dr. S. Ravishankar, while examining the current training practices in PEs, notes that public units lack a firm and long-term policy concerning the training of their managerial personnel. It is a pity that training is not accepted as an integral part of the management process.

The book also deals with public enterprises obtaining in the capitalistic and socialistic economic systems and draws upon lessons from such countries. As space precludes probing into individual author's contribution in this massive volume on PEs, this does not in any way detract from the essential usefulness of this book. But for its cost many would like to acquire this volume.

—G. Srinivasan

Centralised technology for selected electronics

The Government has decided to acquire technology on a centralised basis for Telephone Instruments, Electronic PABX Systems and Rural Automatic Exchanges. This has been done to bring the prices of these products, when produced indigenously, very near to international prices.

A list of decentralised items (not requiring Central Government approval) and their capacity limits has been issued to the State Directors of Industries. For electronic items, not covered in this list, applications in thd normal SSI proforma will be entertained by the Department of Electronics and DCSSI. Submission of production and consumption data in the prescribed format will also be essential.

The Computer-Communication and Instrumentation (CCI) Wing of the Department of Electronics will be the Secretariat for Inter-Ministerial Standing Committee (IMSC) which has been set up to provide single point technical scrutiny for all projects concerning computers, electronic instrumentation and data communication equipment.

All Indian companies (including companies with foreign equity upto 40 per cent) are eligible to manufacture computer systems This excludes 32 and higher bit super-mini/mainframe architecture but includes micro-processor of 32 and higher bit or equivalent CPU, memory and peripheral controllers completely incorporated in LSI/VLSI chips

It may be recalled that a new policy on computers was announced in November 1984. It was followed by an integrated policy for electronics announced on March 21, 1985

Oil exploration gets priority in Seventh Plan

OIL EXPLORATION and development efforts are being increased greatly to be able to achieve the target of 160 million tonnes of crude oil and 60 million cubic metres of gas during the Seventh Plan period.

The financial outlay for the petroleum sector has been stepped up by 50 per cent over the Sixth Plan expenditure from about Rs. 8500 crore to a little over Rs. 12800 crore.

The cumulative oil production is targeted to increase from about 103 million tonnes during the Sixth Plan to about 160 million tonnes during the Seventh Plan period marking a rise of about 55 per cent.

A higher target has been fixed for natural gas production in view of emerging importance of natural gas in the national economy as feed stock, for extraction of cooking gas and for petrochemicals and power generation.

Natural gas production will be stepped up from 7.2 billion cubic metres in 1984-85 to about 15 billion cubic metres by the end of 1989-90 representing an increase of over 100 per cent. The cumulative production during the Seventh Plan will be increased to about 60 billion cubic metres as against 24 billion cubic metres produced during the Sixth Plan.

Since oil exploration and development programmes will place heavy demand for oil field equipment and services, high priority has been accorded to efficient indigenisation of oil field equipment and services. The government has already taken various initiatives at the policy and implementation level including demand export status to the supplies made to the Oil and Natural Gas Commission and Oil India Limited. Price preference is being given for domestic supplies, services, imported supplies, the price preference rate now being as high as 35 per cent.

During the Seventh Plan, oil and gas exploration, production and development would have to be undertaken under increasingly harsher geological environment, necessitating enhanced oil recovery techniques. This would call for a very high order of investment requirements and technological support.

The domestic production is being geared to keep itself abreast of developing technology in order to be internationally competitive and cost effective to ensure quality and delivery schedules.□

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Science and Technology in Seventh Plan

AN OUTLAY of Rs. 2,466 crore is provided for science and technology in the Seventh Five Year Plan. Of this, Rs. 2,303.43 crore is in the Central Sector and Rs. 162.51 crore in States and Union Territories.

The Plan lays special emphasis on the crucial role of science and technology as an instrument of social and economic change. An important element in the approach is to make science and technology an essential and integral part of all major socio-economic sector, to develop capabilities essential for fulfilment of S&T tasks in these areas, and to undertake science missions that are well defined. It would also necessitate establishing linkages among different sectors of education, scientific research, technology development, productive activities in agriculture, industry, etc. and Government decision making structures.

The plans for the application of science and technology for rural development are designed to be meshed more closely with the State plans. There are major new areas in S&T like micro-electronics, informatics and telemetics, robotics, bio-technologies. meterial sciences, oceanography, etc. These are to be required as thrust areas and accordingly will receive significant support.

The Plan also suggests that best talents be attracted to science and technology and priority for this be given to a substantial improvement in the general science and technological facilities in universities and research institutions. Measures are intended to be taken to ensure implementation of the technology plan statement enunciated during the Sixth Plan. □

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